BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 3 1937

CASE OF CHRONIC MONOCYTIC LEUKAEMIA

BY

G. STEWART SMITH, M.D.

Assistant Pathologist to the Manchester City Hospitals

(WITH SPECIAL PLATE)

Although Reschad and Schilling-Torgau first described the condition in 1913, monocytic leukaemia is still a controversial subject, and it is only recently that its existence as a distinct entity has been accepted by most haematologists. It is agreed that these cases should be reported with full haematological and histological data, and the case here put on record has some features not previously described.

Clinical Notes

History.—A woman aged 48 years was admitted to Crumpsall Hospital on January 27, 1937. Three months earlier she had felt pains all over the body, especially in the neck and back, and general malaise. After resting for a month she got up, but had to return to bed as the symptoms continued. During the whole of this time she experienced frequency of micturition and thirst, and during the few weeks before admission had a feeling of heaviness in the left side of the abdomen.

Condition on Admission.—There was no pallor of the skin, but a slight cyanosis was present, and an erythematous rash appeared on the trunk. The mucous membranes were highly coloured, but nothing abnormal was found in the tongue or throat. The spleen was much enlarged, firm, and with sharply notched anterior border. The liver was slightly enlarged. The lymph glands were not palpable. No abnormality was found in the chest or the central nervous system. The urine was normal.

Progress.—Five days after admission a cough developed and catarrhal signs appeared in the chest; these persisted until death. On February 15 the general condition deteriorated and the patient became listless and semi-conscious, but there was no rise of temperature. The symptoms were thought to be due to cerebral thrombosis. Death occurred on February 17 after three weeks in hospital.

A blood count taken on February 2 showed 4,720,000 red cells per c.mm.; 70 per cent. haemoglobin; and a colour index of 0.75. The leucocytes numbered 394,000 per c.mm.: polymorphonuclears 2.5 per cent.; lymphocytes 0.5 per cent.; eosinophils 0.5 per cent.; monocytes 26 per cent.; monoblasts 11.5 per cent.; and primitive cells 59 per cent. The subsequent counts (see Table) showed little change. The Wassermann and van den Bergh reactions were negative, and the red cell fragility was within normal limits.

The monocytes, comprising 96.5 per cent. of the total count, were of three chief types, as stained by Leishman, although a rigid classification is impossible.

Table of Blood Counts

	2/2/37	12/2/37	15/2/37
Red cells per c.mm.	4,720,000	—	4,760,000
Haemoglobin per cent. of normal	70.0	—	75.0
Colour index	0.75	—	0.8
Leucocytes per c.mm.	394,000	461,000	341,000
Polymorphs per cent.	2.5	4.0	3.5
Lymphocytes per cent.	0.5	0.25	0.25
Eosinophils per cent.	0.5	1.0	0.25
Basophils per cent.	—	0.25	—
Monocytes per cent.	26.0	19.0	25.0
Monoblasts per cent.	11.5	14.5	9.0
"Primitive cells" per cent.	59.0	61.0	62.0

1. Monocytes, similar in many respects to the monocytes seen in normal blood, with an average diameter of 14 μ. The nuclei were large, lobulated, and often of unusual shape with slight reticulation. They had a moderate amount of pale blue "ground-glass" cytoplasm with occasional fine azur granules; but granules were not a prominent feature in any of these cells, and the variations in the shape of the nuclei were much greater than those seen in normal monocytes.

2. Monoblasts, larger than the monocytes—average diameter 18 μ—with large round or irregular pale-staining ribbed nucleus and generally two nucleoli. The cytoplasm was non-granular, and in some cells was vacuolated. Pseudopodia were seen in a few cells only.

3. So-called "primitive cells"—average diameter 9 μ. The nucleus, which was sometimes homogeneous, sometimes slightly ribbed, almost filled the cell, and was not uncommonly divided into two or three parts. The cytoplasm was slightly basophilic and non-granular, and typically formed a narrow rim around the nucleus.

The oxidase reaction (Graham's method) was negative in each of these three types. Classification may often be difficult or uncertain when a large proportion of primitive cells are present, but on examination of these films it was quite clear that the three types were all of one series. Some of the points above described are shown in the photomicrographs reproduced in the Special Plate.

Post-mortem Examination

Necropsy was performed on February 18, 1937, eighteen hours after death. There was no evidence of external injury and no rash, and no enlargement of axillary, cervical, or inguinal glands. The bone marrow of the middle of the shaft of the femur was pale creamy reddish brown. The heart (227 grammes) was extremely flaccid; the endocardium showed much post-mortem staining; and the heart muscle was greyish brown. The right ventricle was dilated and the wall very thin. There was no valvular disease and no fatty streaking. The lungs contained a few easily broken down pleural adhesions on each side; both lower lobes showed congestion and oedema. The liver (1,843 grammes) was pale and friable. The spleen (1,531 grammes, length 24 cm.) was uniform maroon in colour and the capsule thick and wrinkled; Malpighian bodies were not evident. A few slightly enlarged lymph glands were found in the gastro-hepatic omentum. The lymph glands elsewhere in the abdomen were not enlarged. The kidneys were mottled greyish yellow, with thickened capsules, which stripped leaving a finely granular surface. The thyroid (28 grammes) contained an adenomatous nodule three-quarters of an inch in diameter in the left lobe. The brain and cerebral vessels showed no abnormality. There was extensive post-mortem staining in all the body cavities.

Histology

The Bone Marrow (fixed Zenker, stained Leishman).—Fatty areas were present. The blood vessels contained many leucocytes. Erythroblasts were very plentiful and eosinophils fairly plentiful, megalokaryocytes scanty; myelocytes were found in large numbers. The other cells were: (1) Large cells, somewhat irregular in shape, with lobulated vesicular nuclei and cytoplasm which was slightly basophilic without definite granules. These were considered to be monocytes and premonocytes. (2) Small cells with deeply staining nuclei, often in two or three divisions, and a small amount of non-granular cytoplasm. These were undoubtedly "blasts." Both these types of cells corresponded well to the cells seen in the vessels in the marrow and with those seen and described in the blood films. The oxidase stain was positive for the myelocytes and eosinophils, negative for the mononuclear cells and "blasts." The presence of much erythroblastic tissue is unusual in leukaemia, but fits in well with the fact that there was no anaemia and no abnormality of the red cells as seen in blood films. The bone marrow, in fact, showed normal myeloid and erythroblastic activity, together with collections of monocytes and their precursors. A somewhat similar bone-marrow picture has been described by Doan and Wiseman (1934).

Spleen (fixed Zenker; stained Leishman).—The capsule was thickened and there was a thin subcapsular zone of red blood cells; the Malpighian bodies were not discernible. The pulp was very compact, and consisted of red blood cells and masses of mononuclear cells which were similar to those seen in the bone marrow except that cells of Type 2, with a rather darkly staining nucleus, frequently double, were more numerous in the spleen than in the portion of marrow examined. A few of the larger cells (monoblasts) had nucleoli, and mitotic figures were frequent. The cytoplasm of the mononuclears was opaque and entirely non-granular. Nucleated red cells were scanty and polymorphonuclears absent. The arrangement of the monocytes in the spleen was not suggestive of any special origin or method of formation. There was no evidence of desquamating endothelium in the sinuses as described by Clough (1932). The absence of lymphoid tissue and polymorphonuclears is important from the point of diagnosis, and will be discussed later.

Lymph Gland (from the gastro-hepatic omentum).—The normal follicular structure was absent. Lymphocytes were present in small numbers, but the tissue was largely composed of monocytes and monoblasts as seen in the other organs. The cells lining the sinuses were well defined, but there was no evidence of proliferation or desquamation. In general the picture was that of a gland which had been infiltrated by leukaemic cells and the lymphadenoid structure was grossly disturbed.

Liver.—There was pronounced central fatty change and some increase of periportal fibrous tissue. The intercellular capillaries showed a general infiltration of monocytes with denser collections in the portal areas; the capillaries around the central vein were congested. The appearances were those of chronic venous congestion with leukaemic infiltrations of "myeloid" distribution, but not as pronounced as is usual in chronic myeloid leukaemia.

Kidney.—There was a general increase in intertubular connective tissue, with many fibroblasts. A few tubules appeared to be normal, but in most the lining showed varying degrees of degeneration up to complete necrosis and shedding of the epithelium. The glomeruli were less affected, but many showed some capsular thickening, and a few complete obliteration and fibrosis of the tuft. These changes, especially as regards the tubules and intertubular connective tissue, were diffuse and advanced, and were probably the cause of death. In both kidneys there were dense infiltrations of mononuclear cells similar to those found elsewhere. The liver, spleen, and kidney contained no free iron.

Heart Muscle.—No fatty change, but there was slight leukaemic infiltration.

Lungs.—These showed oedema and congestion, with leukaemic cells in the exudates.

Discussion

It is not proposed in this article to survey the literature of monocytic leukaemia; Dameshek (1930) and Clough (1932) reviewed all the cases published up to that time, and Gittins and Hawksley (1933) gave notes on cases reported since Dameshek's paper. To date some thirty reported cases have been published, but only six in this country (Cooke, 1931; Gittins and Hawksley, 1933; Orr, 1933, two cases; Whitby and Christie, 1935; and Israëls, 1937). Most have been acute cases, with symptoms such as stomatitis and haemorrhages, common to all acute leukaemias. In the present case death occurred from nephritis.

Accepting monocytic leukaemia as a separate disease, a chronic form, as with the other leukaemias, might be expected to occur, and the features of this case seem to warrant its recognition as an example of a chronic leukaemia of monocytic type.

The spleen, which weighed 1,531 grammes and was 24 cm. long, was much larger than has been previously described in monocytic leukaemia. Mostly in this disease the spleen is not palpably enlarged, though in a few cases there is moderate enlargement. The size of the spleen in the case here described implies chronicity. The diagnosis rests between three conditions:

1. Chronic lymphatic leukaemia.—The abnormal cells in the blood were not lymphoid as regards either nucleus or cytoplasm. There was no general enlargement of the lymphatic glands, and the lymphoid tissue in the spleen

and lymph glands was not increased, but was decreased in amount and replaced by leukaemic infiltration.

2. Chronic myeloid leukaemia.—This is the condition which presents the most difficulty in differential diagnosis, since it is admitted that the cellular infiltrations in the organs are "myeloid" in distribution and the spleen is similar in size to a chronic myeloid spleen. It has been pointed out also (Gittins and Hawksley, 1933) that monocytes or monocytoid cells may appear in large numbers in the blood during the course of myeloid leukaemia. In the present case, however, the following facts are definitely against a diagnosis of chronic myeloid leukaemia: (*a*) Polymorphonuclears did not account for more than 4 per cent. of the leucocytes in the blood, and no myelocytes or myeloblasts of usual type were seen in a total of 461,000 leucocytes per c.mm. It is difficult to picture a case of myeloid leukaemia with so high a leucocyte count without at least a fair proportion of primitive cells definitely of the granular myeloid series. (*b*) The bone marrow contained normal erythroblastic and myeloblastic elements with an intermingling of mononuclear cells. The picture was not that seen in chronic myeloid leukaemia, in which the erythroblastic elements are crowded out by all types of granulocytes and their precursors. (*c*) The oxidase reaction of the monocytic cells in the blood, bone marrow, and spleen was negative. This is strong evidence against myeloid leukaemia.

3. Chronic monocytic leukaemia.—It is obvious from the literature that many different types of cells have been observed in cases considered to be monocytic leukaemia, ranging from monocytes similar to those found in normal blood to actively phagocytic histiocytes. In this case the monoblasts and monocytes (Types 1 and 2 in the differential blood count) appear to be typical as to size of cell, shape and character of nucleus, and colour and opacity of cytoplasm. Granules, although present in very few of the maturer monocytes, definitely were a rare feature. Some typical monoblasts with mitotic figures were seen in the spleen. The negative oxidase reaction, although valuable evidence against the cells being abnormal myelocytes, does not establish their identity, since monocytes may give a varied result with this method.

The cells classed as "primitive cells," Type 3, are more difficult to place. The absence of nucleoli from most of them, together with the fact that the nucleus was often divided into two or three parts, is quite unlike the picture of either myeloblasts or lymphoblasts; except for the absence of granules they are very similar to cells drawn and described by Doan and Wiseman (1934) as premonocytes in a case of monocytic leukaemia with a long history, ending in death from intercurrent disease. They state that "multinucleated cells are encountered frequently both in the blood and in the tissues in monocytic leukaemia." The name "premonocyte" suggests that they considered them to occupy a position between the monoblast and the mature monocyte. The lack of differentiation, combined with other features, however, leads me to a tentative conclusion that they are more primitive still than the large monoblasts, although of the same series. The supravital staining methods were not used in this case, but it is doubtful, in view of the contradictory findings of different workers (summarized by Hall, 1930), whether they add anything of diagnostic importance to the information obtained from dry smears.

Two features are worthy of special comment. (*a*) The fact that active erythropoiesis was going on in the bone marrow, and the corresponding absence of any anaemia in spite of a leucocytosis of 500,000 per c.mm. A progressive anaemia is almost the rule in leukaemia of this degree. (*b*) The spleen was densely infiltrated with monocytes and primitive cells, the latter being more plentiful than in the bone marrow, suggesting that the monocytes were being produced chiefly in the spleen.

Summary

1. A case of monocytic leukaemia is described, with haematological and histological findings.

2. The disease is rare, and a case with the high leucocyte count here recorded and the greatly enlarged spleen has not previously been reported.

3. It is considered that the case is one of chronic monocytic leukaemia.

I wish to thank Dr. C. S. D. Don, senior visiting physician to Crumpsall Hospital, for permission to publish this case, and Dr. G. D. Dawson and Dr. M. C. G. Israëls for helpful criticism.

REFERENCES

Clough, P. W. (1932). *Johns Hopk. Hosp. Bull.*, **51**, 148.
Cooke, W. E. (1931). *Lancet*, **2**, 129.
Dameshek, W. (1930). *Arch. intern. Med.*, **46**, 718.
Doan, C. A., and Wiseman, B. K. (1934). *Ann. intern. Med.*, **8**, 383.
Gittins, R., and Hawksley, J. C. (1933). *J. Path. Bact.*, **36**, 115.
Hall, B. E. (1930). *Folia Haematol.*, **43**, 206.
Israëls, M. C. G. (1937). *British Medical Journal*, **1**, 601.
Orr, J. W. (1933). *Lancet*, **1**, 403.
Reschad, H., and Schilling-Torgau, V. (1913). *Münch. med Wschr.*, **60**, 1981.
Whitby, L. E. H., and Christie, J. M. (1935). *Lancet*, **1**, 80.

VESICAL EXTROVERSION WITH CONTROL OF MICTURITION

BY

A. RALPH THOMPSON, Ch.M., F.R.C.S.

Consulting Surgeon, Genito-Urinary Department, Guy's Hospital

(WITH SPECIAL PLATE)

The two cases of extroversion of the bladder recorded in this paper are worthy of attention in that they show the value of as complete a clinical examination in this type of case as is possible. For this purpose an anaesthetic should be given, and this has the additional advantage of allowing an artist to draw what is seen, at his leisure, and under the guidance of the surgeon. The cases also show that an operation directed towards closure of the bladder may, under the conditions which are to be noted, be of great value in leading to voluntary control of micturition, with as little disturbance of the parts as is possible. The main importance of the cases is that there was a normal proximal urethra developed in association with an extroversion of the bladder. This possibility is not generally recognized, but it is so important that no excuse need be offered for its early mention. For a very long time I have suspected that even in cases of advanced extroversion of the bladder much more of the normal urethra may be developed than authorities have apparently believed. In support of this assertion three cases of mine may be mentioned that seem to prove the occurrence of such a condition. In the absence of the two main cases which form the subject of this paper, the possibility of there being a normal proximal urethra is difficult of demonstration or conception. One of these cases, however, undoubtedly shows the presence of a normal proximal urethra. Two illustrations are here shown (Special Plate, Figs. I and 2) the originals of which are

water-colour pictures executed by Miss M. Barford, sister at Guy's Hospital, and Miss Miall-Smith, formerly house-surgeon at the Victoria Hospital for Children.

Case I

The first case is the more important. A child aged 2 years was sent to me by Dr. G. B. Muriel of Whitehaven, Cumberland. The patient was quite healthy, and mentally most intelligent. I had no hesitation in pronouncing the child to be a boy. An anaesthetic was given and as complete an examination made as was possible. Miss Barford also took the opportunity to make a water-colour drawing of the condition (Fig. 1). This examination was done in July, 1936. At the end of the month the boy developed whooping-cough, and was sent to stay with an aunt who took very great care of him. The opinion as to the sex of the child was confirmed in September by the formation of a painful non-inflammatory swelling in the left groin, and the descent of the left testicle occurred. Later on, when all pain and abdominal swelling had gone, Mr. Bromley confirmed my opinion that the swelling was the left testicle. In October, 1936, an operation was performed by me at the Putney Hospital. The bladder was constructed; complete union of the parts occurred, and the patient gained control of micturition. This control of micturition has persisted, and early in June of this year an aunt who had taken charge of the infant wrote me as follows: "He can hold his water . . . all he complains of is pain in that lump [the descending testicle], otherwise he is fine and never wets his clothes." This good result is in great part due to Mr. Bromley, who very kindly helped me at the operation, and to the medical and nursing staff at Putney, who all showed great interest.

The details of the case are as follows. The mother gave the information that the cord was cut at birth as usual. After admission an examination was carried out under an anaesthetic. Mr. W. M. Dunham, then dresser in the genito-urinary department at Guy's Hospital, helped me, and it is largely due to him that the exact condition of affairs was discovered. There was a distinct extroversion of the wall of the bladder, which was smaller than usual in my experience of these cases (about thirty in number). This was situated in the lower part of the anterior abdominal wall. The extroversion of the bladder was circular and umbilicated, and measured three-quarters of an inch in diameter. The surface was distinctly red, and was clearly that of a mucous membrane. In the perineum there was a similarly coloured groove or gutter, which passed downwards and backwards towards the anus, but did not reach as far. The extroverted bladder was separated from the perineal gutter or groove by a bridge of skin which was not more than a third of an inch wide. The gutter was about an inch long and half an inch wide. It stopped short of the anus by one inch.

Before a further description of the parts is offered it may be pointed out that three common conditions present with ectopia vesicae were evident in this case. There were wide divarication of the two rectus muscles of the abdomen in the lower half, wide divarication of the pubic bones, and a general raising up of the bladder, perineum, and anus towards the head of the patient. I had often before noted this last point, and the first two observations are well known and constant in cases of extroversion of the bladder and so-called epispadias. There was a large ventral hernia, and at the upper part of this and situated slightly to the right of the midline appeared the remains of the umbilical cord, quite normal in appearance save that the navel was slightly stretched by the hernial protrusion.

The important fact of this case was found in the perineal gutter. There was a small protuberance on each side of the perineal gutter which extended downwards and inwards towards the midline. Each protuberance was not unlike a penis on a very diminutive scale, and I did not doubt that it was an incomplete phallic eminence which had remained bifid. In the perineal gutter were five orifices; the first and most important was median and single, and lay in front of the others. On Mr. Dunham's suggestion I passed a probe through this orifice, and another through the bladder opening, and the probes touched each other, making a metallic click.

After twenty years of some experience of these cases a normal proximal urethra was recognized by me as associated with an extroversion of the bladder. Behind this opening were two paired holes, one of each pair by the side of the midline and close to it. The two posterior orifices were oval, an eighth of an inch long and a sixteenth of an inch broad. The two anterior orifices were of similar size and shape. It was found that the two posterior orifices were only divided by a bridle-like structure, and opened into a single cavity. This cavity passed upwards for about an inch. The two orifices in front of them opened into distinct cavities which passed upwards and backwards. None of these holes appeared to make any connexion with the bladder, and though they are probably of very great interest, further discussion as to their nature would be out of place here. It is with the anterior orifice that we are concerned. For although it was incomplete it was a true urethra, and for this reason the capability of controlling the act of micturition might exist. Up to now I think the possibility of such a condition being present has hardly received the attention it deserves. It was not an easy procedure to introduce a probe through the orifice into the bladder, but I am quite sure that no structure was perforated and that the difficulty was caused in fact by a slight curve in the passage and perhaps by folds of mucous membrane. It is solely because of the presence of this passage that I have been tempted to place the case on record. But this case is not, I am disposed to think, the only one it has fallen to my lot to see and observe partially. But before describing the second case I may say that in one case of extroversion of the bladder and in two cases of so-called epispadias there has been some evidence, as proved by dissection or by the pointing of a stone in the perineum of a case of extroversion, that more of the proximal urethra may have been developed than was obvious at a superficial examination.

Case II

This child was born in the Guy's district at the end of 1917. The birth was normal and the cord was cut in the usual manner. The diagnosis, in which I shared, was that the baby was a female. She was christened Frances, and in this connexion it may be noted that the names of Cecil and Evelyn are also useful for these babies of doubtful sex rather than the unequivocal Peter or Margaret.

As soon as the baby was weaned it was transferred to the Victoria Hospital for Children. Miss Miall-Smith not only took trouble about making a water-colour sketch of the anatomy but was also most assiduous in looking after the case before, during, and after the operation. The first operation, undertaken in the first three months of life, was a complete failure, but a second was a complete success, and this was carried out in the next three months, when the parts had resumed their former

condition. A small orifice was left in the wound deliberately, for the purpose of allowing urine to drain away from the bladder. At the end of 1918, when the baby was about a year old, he was admitted to a London infirmary suffering from bronchopneumonia. I wrote personally to the superintendent telling him of the importance of the case, and he was kind enough to reply, stating that an occasional drop of urine was discoverable at the orifice of a small fistula in the wound. The baby died from the pneumonia; but I was not informed of this, so was not present at any further examination. I saw the mother afterwards and she informed me that she thought the young infant had gained some control over the flow of urine; this remark supports what was said by the medical superintendent at the infirmary. It may therefore be claimed that there had been control gained to some extent though the baby was only 14 months old when death occurred. In view of Case I, recorded above, I cannot help but think that the control in this second case came through a normal proximal urethra being present, and that the fistula left at the second operation may have been closing up at the time of death. The anatomical condition as studied clinically was as follows. The infant was well developed and not at all fretful, and soon took well to hospital life. The condition found is well shown in the illustration (Fig. 2, Special Plate). There was a large extroversion of the bladder, measuring two inches laterally and one and a half inches from above downwards. Both ureteric orifices were visible on the surface of the protruded bladder. Below the level of the bladder was a bridge of skin which passed across the middle line and connected the two sides of the abdomen. Below this bridge of skin there was what may be called a perineum. At the front part of this was a circular hole, which was situated upon the summit of a distinct though small protuberance.

At about the level of this protuberance and orifice and on each side of the midline was a symmetrical body exactly similar to a small penis. This projected inwards and downwards, and was about half an inch in length. The tips of these paired bodies were separated by a distance of half an inch. Behind and below these prominences there was a bilateral swelling, conical in shape and also directed inwards and downwards. These eminences were yellow in colour; they did not project so far inwards as the previous ones, and were three-quarters of an inch from each other. Behind them, but in the middle line, was the anus, which was normal. Some years after seeing and operating upon this case I came to the tardy but inevitable conclusion that the child was a male. The anterior projections were parts of a bifid penis, and the eminences behind these were undeveloped but distinct parts of the scrotum.

Now in view of the previous case I am drawn to the conclusion that the orifice mentioned as lying in the midline was really a partially developed urethra. I cannot help but think that after the second operation the baby passed water through this orifice, for we know from the infirmary report that only an occasional drop of urine was found at the site of the small fistula that had been left at the operation.

S. G. Shattock laid it down, when at the Royal College of Surgeons, that hypospadias could not occur with an extroversion of the bladder. I have a series of photographs of a male foetus which was born dead. It had a large extroversion of the bladder on the surface of which the bowel opened. In this case, however, there was a definite penis with a fully formed scrotum, and also a prepuce, and on the under surface of the glans penis was an opening which led backwards along the normal course of the urethra. In fact, it appeared to be a normal urethra. This passage did not, however, make a connexion with the bladder, but passed directly into the vesiculae seminales, as shown by Dr. G. W. Nicholson. The case is most interesting, but need not detain us now; we must be careful, however, in accepting as true a statement made even by such an authority as the late Professor Shattock.

It is sufficient here to state that in two cases of extroversion of the bladder proximal urethras were present which were capable of controlling micturition.

For the true nature of this incompletely developed urethra I must refer to other articles I have written on this subject.

The Operation on Case I

Thanks to the assistance of Mr. Bromley and my former house-surgeon, Mr. John Rowlands, the operation was quite quickly performed. After an anaesthetic had been given and continued the extroverted bladder was pushed back into the abdomen, and an incision was carried round the mucosa, of which a good edge was exposed. Catgut sutures were used to join the edges transversely. The circular incision around the mucous membrane was extended on each side transversely, for about three-quarters of an inch. The skin edges were everted widely, and a broadish linear area of subcutaneous tissue was thus exposed. Lembert catgut sutures were applied to this surface on each side of the long axis of the wound, drawn together and tied, and then cut short. Thus the bladder was buried deeply with a good covering of subcutaneous tissue. The skin edges were then united with fine salmon-gut sutures. A collodion dressing was applied and the patient was sent back to bed. Instructions were given that when he had recovered from the anaesthetic he was to be allowed to do as he wanted, and was to be permitted to walk about the ward if he wished. I very greatly object to having these babies tied down in bed. These conditions are not natural ones, and the crying induced by the confinement does a great deal of harm. As there was no catheter in the bladder natural conditions were called for. The patient at once was able to hold his water, according to Mr. Rowlands; and continued to do so except when he wished to micturate, at which time he passed urine in a good stream. This happy result continues, and naturally the parents are delighted. The salmon-gut sutures were removed about the tenth day. The normal proximal urethra is performing its duty of controlling micturition.

Very much the same operation was performed on Case II (the first in point of time). As I have said already, the first operation was a failure, the second was a success.

Commentary

The important point which I have tried to bring out in this paper is that whilst there was in both cases a well-marked extroversion of the bladder, there was in one certainly, and in the other probably, a proximal urethra capable of controlling the flow of urine. In such cases construction of the bladder as a hollow cavity may be the operation of choice rather than the more severe and much more difficult operations of uniting the urinary and alimentary tracts, with which the names of Stiles, Nitch, and Grey Turner are so honourably associated in Great Britain. I should like to add a personal point. It is curious that at the end of eighteen years a second case should explain the anatomy and surgery of a prior one.

TUBO-UTERINE IMPLANTATION FOR STERILITY

FOLLOWED BY FULL-TERM PREGNANCY

BY

V. B. GREEN-ARMYTAGE, M.D., F.R.C.P., F.C.O.G.

Gynaecologist to the West London Hospital, Hammersmith; Visiting Gynaecologist and Obstetrician on the Staff of the British Postgraduate College, Hammersmith

(WITH SPECIAL PLATE)

The first tubal implantation resulting in full-term pregnancy was reported by Shaw and Cullen in 1921. The second recorded was by Unterberger in 1925. Von Graff in 1936 published the results of the seventy tubo-uterine implantations reported in the literature. Of these twenty-six were followed by pregnancy; only twenty-three, however, went to full term, one ended prematurely, one terminated in abortion, and one was an ectopic gestation—that is, an incidence of pregnancy amounting to 32.9 per cent.

Greenhill (1937), in order to determine the sentiment of American gynaecologists concerning salpingostomy and tubal implantation for sterility, sent a questionary to members of the American Gynecological and Obstetrical Society and the American Association of Obstetricians, Gynaecologists, and Abdominal Surgeons. One hundred and seven replies were received.

Fifty-three of the specialists had never performed a salpingostomy. Eighty-eight had never considered tubal implantation as an operation worth performing for the purpose of overcoming sterility.

On the other hand, thirty-five were strongly in favour of plastic operations upon the tubes, believing that the misery associated with sterility justifies the technique, however meticulous, however disappointing. Their results worked out at one pregnancy for every fifteen operations, and one full-term living child for every twenty-two abdominal sections.

The same atmosphere of pessimism is found in this country. For instance, Beckwith Whitehouse in the fourth edition (1935) of Eden and Lockyer writes: "The technique requires considerable skill and the operation is not lightly to be undertaken. The method is as yet too recent and the published records of success too few to express a considered opinion as to its ultimate value." Later, however, he states that he has had one successful case.

Similarly at the sixth British Congress of Obstetricians and Gynaecologists, 1936, after a stimulating paper on the subject by Bethel Solomons (1936), the majority of those present expressed the opinion that the abdomen should not as a rule be opened directly for the purpose of operating on the Fallopian tubes. On the other hand, a minority following the dictum of Harvey "to seek out and study the secrets of Nature by way of experiment" thought that all cases of tubal sterility should be carefully investigated with reference to previous history, menstruation, etc., and emphasized the necessity of methods of precision being first used to determine the site of obstruction, by far the most scientific being that of hysterosalpingography. They were of the opinion that if the case were suitable a plastic operation was worth while, no matter what part of the tube was involved.

Solomons stated that he had sent a questionary to 150 world-known gynaecologists. Fifty-three replies were received from those who operated upon the tubes. The answers showed that the incidence of pregnancy, after salpingostomy alone, averaged from 8 to 10 per cent., though the figures of Rubin, Norris, Blair-Bell, and Gellhorn were very considerably better. After tubal implantation only six full-term live children were reported. In two cases abortion occurred.

It is significant that only thirteen out of the fifty-three surgeons who answered the questionary stated that they tested the patency of the tubes after operation. This is the acid test of any technique employed, and if not applied in every case as a routine measure, it were perhaps better not to operate at all. For my own part I believe the best test from both the physical and the psychological point of view is the salpingogram, which cannot lie and which should be taken two weeks, ten weeks, and twenty weeks after whatever operation has been performed. Using the Seguy apparatus (Drapier et Cie), put on the English market by Allen and Hanburys, radiographs can be taken without pain or anaesthetic, although if need be they can be done under morphine or evipan.

It is possible that a careful choice of cases and improved technique will yield in the future a larger incidence of success to those who are willing to operate; for, provided there is no complete occlusion of the Fallopian tubes by gonorrhoeal, post-abortal, puerperal, or tuberculous infection and the semen of the husband is normal, there is no contraindication. Moreover, it must be realized that when the history and clinical findings are assured we have in salpingography a method which enables us to determine the site of occlusion and thereby base the strategy and tactics of any proposed procedure.

Operative Methods

Hitherto many surgeons have followed the technique of Douay (1936), Seguy, and Blair-Bell (1934)—that is, after applying a myomectomy clamp the cornu of the uterus comprising the interstitial portion of the tube is resected. The end of each tube having been bifurcated, it is then threaded with silkworm-gut and drawn within the uterine cavity and sewn *in situ* with fine catgut as in Fig. A.

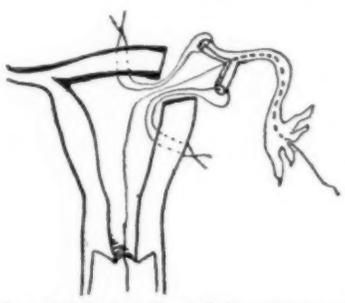


FIG. A.—After wedge resection of the cornu and resection of the occluded isthmial part of the tube, it is bifurcated, threaded with gut, and drawn into the lumen of the uterus. It is then lightly sutured *in situ*.

Great care is taken, when the cut cornual surfaces are joined, that there is no strangulation of the implanted tube. A week later the silkworm-gut is removed. The tubes are tested with air or lipiodol from time to time.

Others have adopted the method of Solomons—that is, the uterus is first bisected. After excising the occluded area the distal and patent part of the tube is threaded with catgut. The cornu of the uterus is shaved to expose the line of the interstitial part of the tube, which is then expanded sufficiently with dilators to draw the threaded tubes into the lumen of the uterine cavity; fine anchoring sutures are then applied through the bisected uterus to keep the implanted tubes in place.

The technique of Bonney (1936) is the simplest. After applying his myomectomy clamp and ring forceps to the infundibulo-pelvic ligaments, he splits transversely the fundus of the uterus from cornu to cornu until the cavity of the uterus is opened. The occluded isthmial part of the tubes having been excised, a strand of silkworm-gut is threaded along each tube from the outer to the inner end. The tube ends are now laid carefully in the line of the transverse fundal incision so that the free amputated ends of the tubes are projecting actually into the cavity of the uterus. The long ends of the silkworm-gut are passed through the eye of a special dilator and drawn into the vagina after releasing the clamp. The tubes are fixed *in situ* by interrupted sutures of fine catgut, and as an additional safeguard a few sutures are inserted through the muscle of the tubes to the outer part of the cornual incision on each side. The silkworm-gut is removed about the tenth day. Mr. Bonney (1937) has had 18 per cent. of successes from salpingostomy, and has recorded five pregnancies following double and single implantation of the tubes with or without simultaneous salpingostomy. His results are inspiring and dispel pessimism.

It is proposed to describe a modification of this technique which has recently resulted in a full-term pregnancy.

Illustrative Case

Mrs. D., aged 25, married two years, was admitted with a history of four miscarriages to the West London Hospital on March 4, 1933, for retention of urine and intractable vomiting. The uterus was twelve weeks pregnant, retroverted, incarcerated, and fixed. Endeavour was made under an anaesthetic to replace it on two consecutive days, with failure on both occasions. The abdomen was therefore opened. It was seen that the fundus was fixed by dense adhesions to the posterior parietes, presumably subsequent to one or other of the four previous miscarriages. A modified Gilliam operation was performed. She went to full term, and as she had a typical funnel-shaped pelvis, demonstrated by measurements and radiographs, a lower-segment Caesarean section was performed on November 22, 1933.

Seeing that she had had four miscarriages and already two abdominal operations (one previous to admission for appendicitis), she and her husband demanded that she should be sterilized. Against strong advice this was insisted upon. Sterilization by excision of the cornual portions of the tubes was performed. Three days later the infant died, and was found at necropsy to have congenital heart disease (patent foramen ovale) and atelectasis.

In August, 1935, being very miserable, she came to the out-patient department asking if she could have another baby. Rather diffidently I informed her of such a possibility if she would submit to the operation of tubo-uterine implantation. Fig. 1 (see Plate) shows the uterus before operation. On October 20, 1935, with the following modifications, the Bonney technique was used. (Fig. 2 shows the result six months after operation.)

The Modified Bonney Technique

First a twelve-inch-long probe is passed eye forwards from the vagina through the cervix up to the top of the fundus uteri. It is then clamped *in situ* by a vulsellum on the cervix. On opening the abdomen a myomectomy clamp is placed round the cervix, and ring forceps are applied on the infundibulo-pelvic ligaments.

The proximal stenosed ends having been excised, a fine bodkin threaded with a long piece of Japanese silkworm-gut is passed gently through each tube so that about two inches remain visible at the distal end of the tubes, and about fourteen inches are available at the proximal ends to be threaded into the eye of the probe that is now exposed by making a transverse incision across the fundus of the uterus from cornu to cornu.

Each threaded tube with its intact mesentery is now snugly and rapidly placed in the V-shaped groove at each cornu so that about a quarter of an inch of each proximal end projects well into the endometrial cavity. Having lightly anchored the muscle wall of the tube with fine catgut at each cornu, the free long ends of silkworm-gut are threaded into the eye of the probe which has been referred to. The clamp being relaxed, the vulsellum on the cervix is released by an assistant and the probe slowly withdrawn, carrying with it the two lengths of gut. These are sutured to each side of the vaginal outlet at the end of the operation. The clamp and ring forceps being removed, the fundal incision is then closed with deep and superficial catgut as in a Caesarean section, particular attention being taken of the cornual portions, lest any undue compression of the buried though threaded tubes occurs. The technique with perfect haemostasis is not difficult, and can be completed under the hour.

The silkworm-gut is withdrawn in the ward on the twelfth day. The advantage of Japanese silkworm-gut is that it softens and it does not disintegrate or irritate.

On September 8, 1936, Mrs. D. reported that she had missed two periods. Examination showed that she was pregnant. She was carefully watched during the antenatal period. Six weeks before she was due she was admitted for observation and rest, lest labour should come on prematurely or the fundal scar give. *X*-ray photographs showed at first a breech; after two weeks spontaneous version occurred. On April 7, 1937, a classical Caesarean section was performed. A healthy child weighing 5 lb. 10 oz. was delivered. There were a good many adhesions of omentum to the top of the uterus where the fundal incision had been made. These were not interfered with. The implanted tubes measured only two inches in length. No sterilization was done. The postnatal period was afebrile and uneventful. She left hospital on the twenty-eighth day, the baby weighing 6 lb.

Commentary

The case is reported in order to stimulate others to undertake plastic operations upon the tubes. Hitherto my personal success with salpingostomies has been four living children, the fruit of twenty-five laparotomies. Tubo-uterine implantation has been done thrice with one success.

The modified technique described is not difficult. The complete haemostasis obtained with clamp and ring forceps makes technical tactics easy.

Hitherto many gynaecologists have considered that operation is hardly worth while unless the Fallopian tubes are only occluded at the fimbrial ends; but when one considers how very miserable the sterile woman often is it does seem proper in a suitable case to give her the option of surgery provided some portion of the tube or tubes is patent, for, in the words of Bethel Solomons, "just as an occasional good golf shot impels the worst player to persist with the game, so occasional success in plastic surgery of the Fallopian tubes will impel the gynaecologist to continue his efforts and improve his technique, thereby achieving better results."

REFERENCES

Berkeley, C., and Bonney, V. (1936). *Textbook of Gynaecological Surgery*, third edition, London.

Blair-Bell, W. (1934). *Principles of Gynaecology*, fourth edition, London.

Bonney, V. (1937). *J. Obstet. Gynaec. Brit. Emp.*, **44**, 1.

Douay and Chalier (1936). *Rapports 5me Cong. Franç. de Gyn.*, Paris.

Eden, T. W., and Lockyer, C. (1935). *Gynaecology*, fourth edition, London.

Greenhill, J. P. (1937). *Amer. J. Obstet. Gynec.*, **33**, 39.

Shaw, H. N. (1921). *Johns Hopk. Hosp. Bull.*, **32**, 305.

Solomons, Bethel (1936). *J. Obstet. Gynaec. Brit. Emp.*, **43**, 619.

Unterberger, F. (1925). *Mschr. Geburtsch. Gynäk.*, **71**, 63.

von Graff, E. (1936). *J. Iowa med. Soc.*, **26**, 31.

GAUCHER'S DISEASE OF THE LUNGS

BY

BERNARD MYERS, C.M.G., M.D., F.R.C.P.

(WITH SPECIAL PLATE)

Gaucher's disease is comparatively rare, and affection of the lungs by it still more rare. So far I have not been able to find records of a case in this country similar to the one I am describing. Gaucher's disease has been described as a non-hereditary, congenital, familial disease due to changed lipoid metabolism, which produces an abnormal substance called kerasin. More cases occur in females than in males. It is believed that certain cells of the reticulo-endothelial system store the kerasin to form what are called typical Gaucher cells. These cells are chiefly found in the spleen, liver, lymph glands, and bone marrow.

This affection is recognized clinically by the distinct enlargement of the spleen and liver, the pinguecula-like thickenings of the conjunctivae, a light yellowish-brown pigmentation of the skin and sclera, various changes in the bones, leucopenia, thrombocytopenia, and the haemorrhagic diathesis. Sometimes the lymph glands are enlarged. Ascites is only occasionally seen. The pain experienced over the bones particularly is that of a dull ache, but the pain over the spleen and liver, and I believe also in the lungs, is apt to be sharper. The disease may be encountered at any time from birth to about middle age.

Diagnosis is made from the symptoms described above, but especially from the peculiar tint of the skin, splenomegaly, and usually hepatomegaly without ascites, flask-like expansion of the lower ends of the femora accompanied by dull ache or even sharp pain, a raised temperature, leucopenia, and hypochromic anaemia, and is clinched, if necessary, by a splenic puncture and the finding of Gaucher cells, or by finding these cells after biopsy of a gland.

Sobotka and others (1933) state: "At least three pathological entities of generalized 'lipoid storage' disease or lipoidosis have been distinguished from clinical and pathological evidence and confirmed by chemical investigations: (1) Gaucher's splenomegaly, characterized by large deposits of a cerebroside; kerasin, in spleen and liver; (2) Niemann-Pick's disease, in which the phosphatide and cholesterol contents of the viscera, the bone marrow, and the brain are increased at the expense of neutral fat; (3) Schüller-Christian's disease, with replacement of the bone tissue by cholesterol deposits."

Case History

A little girl aged 2 years and 7 months was admitted to the Royal Waterloo Hospital on September 16, 1931, on account of a distinctly enlarged abdomen, and general weakness and illness. Upon examination it was found that she was small for her age and appeared to be very ill indeed. There was a slight icteric tint of the skin generally, which also affected the conjunctivae to some extent. The abdominal prominence was due to a greatly enlarged spleen, which reached to the pubes and just to the right of the middle line. Its texture was moderately firm and smooth. The liver was enlarged two fingerbreadths. There had been three attacks of epistaxis during the past few months, the last, a month previously, having been quite severe. The coagulation time of the blood was normal; the bleeding-time a little prolonged—6 minutes. The red blood corpuscles were 800,000 per c.mm. on admission and the haemoglobin 19 per cent., but this was reduced to 16 per cent. two days later. The white blood corpuscles numbered 3,100. The Wassermann reaction was negative, and the fragility test normal. The van den Bergh test, both direct and indirect, was negative. The urine was normal. Examination of the stools showed a very slight excess of split fat (fatty acid), but no unsplit fat. No undigested muscle or starch was seen.

The child evidently had had an enlarged abdomen since the early months of life and attended many clinics, etc., and had been apparently regarded as a rare case of rickets. However, no sign of the latter was evident when the child was admitted to hospital. The general appearance, the spleen, the leucopenia, the epistaxis, and anaemia seemed to fit in with the diagnosis of Gaucher's disease, which was made tentatively. It was intended to do a splenic puncture and settle the diagnosis by a microscopical examination of the cells, but on account of the child's desperate condition it was decided not to; consequently, two days after admission, as a possible chance of saving her life, I asked my colleague, Mr. Rodney Maingot, to perform splenectomy. This was done on September 19, 1931. The spleen weighed 39 oz., and both Dr. Knott and Professor Kettle found typical Gaucher cells present. No similar case had occurred in the family.

Contrary to expectation the little patient made a perfect recovery, and within three to four months the blood count was practically normal.

During April, 1932, she was readmitted to hospital with great pain at the lower end of the right femur. The condition was diagnosed as osteomyelitis, and Mr. St. John Buxton operated and found greyish-green pus from which a few colonies of *Staphylococcus albus* were grown. Gaucher cells were present in the bony canals of necrosed bone taken away at the operation. Looking back on this case, I am not sure if it was not the ordinary invasion by Gaucher cells which occurs in some of the bones in Gaucher's disease and not osteomyelitis.

During the next two years the patient complained of pain in the back, which was found by *x*-ray examination to be accompanied by gradual atrophy of the bodies of some six or seven dorsal vertebrae, and was obviously due to the Gaucher process. Mr. St. John Buxton undertook to treat the condition.

The following year there was a certain amount of enlargement of the glands in the neck and groin; and pain with a moderately high temperature appeared suddenly, accompanying enlargement of the lower end of the left femur. *X*-ray examination showed the condition to be typical of Gaucher's disease. No operation was done; the temperature and pain gradually disappeared, but the flask-like expanded appearance of the lower end of the left femur remained (as had happened to the right femur).

In August, 1935, the child was again admitted into hospital with what at first sight seemed to be whooping-cough; but on going into the history thoroughly, and taking into consideration the peculiar nature of the cough, the condition appeared to be produced by pressure on the bronchi. Great pain was present behind the sternum, especially the lower end, for which small doses of morphine alone gave relief. The temperature was moderately high, and the respirations and pulse increased in frequency. Careful examination revealed some dullness below the left clavicle and gave the signs of what appeared to be lobar pneumonia. The severe substernal pain gradually disappeared after about a fortnight. Fresh areas of dullness were noted in various parts of the lungs, and the sputum was fairly copious. During this time and the next year the sputum was examined about twenty times for Gaucher cells, but the result was always negative. A number of *x*-ray examinations, made at first fortnightly and afterwards monthly, showed a gradually increasing process spreading from the mediastinum towards each axillary region, the dullness becoming more and more marked. The area of bronchial breathing below the left clavicle persisted, and similar areas gradually became manifest over various parts of the front and back of the lungs. Many medium moist rales were heard, and these persisted. Last November a sudden great pain was felt by the child in the

right axillary region, and very definite signs of pleurisy were found there.

The blood count in August, 1935, when the child was 6½ years old, was: red cells, 5,200,000; haemoglobin, 87 per cent.; colour index, 0.82; white cells, 73,600; polymorphonuclears, 65 per cent.; lymphocytes, 27 per cent. In making the differential count the pathologist stated that many dead or basket cells were found. The platelets were fairly numerous.

The pulmonary process was certainly different from anything I had seen in a child before, and as Gaucher's disease was present in other parts of the reticulo-endothelial system the pulmonary condition was looked upon as being probably due to the same affection.

During 1935 and 1936 the liver became greatly enlarged and reached nearly to the pubes, also extending beyond the umbilicus into the left hypochondriac region. The child's growth was certainly being interfered with by the faulty fatty metabolism present. She was distinctly smaller and much lighter in weight than her sister, who was two years younger. During 1936 various nervous manifestations became evident; she would become irritable without cause, and developed movements of the eyes, mouth, nose, face, and neck, often for only a few days at a time, but they never entirely disappeared.

Death took place on January 15, 1937, and as a partial necropsy was allowed the diagnosis of Gaucher's disease was verified. I append reports.

Pathological Report

The following are the necropsy findings reported by Dr. F. A. Knott:

The body showed considerable wasting and, for the child's age, underdevelopment of the muscles and bony skeleton. The dorsal vertebrae were markedly arched forward owing to the collapse of some of their bodies. The abdomen was very protuberant because of the greatly enlarged liver. There were no bruises or pigmentation, and no oedema.

On opening the abdomen the most striking feature was an enormously enlarged liver, which weighed 3 lb. 7 oz. Its surface was smooth, and the enlargement occurred equally throughout all the lobes. The gall-bladder and biliary tracts were normal. The liver had a pale pink colour as a whole, with irregular patches of dull yellow. It had formed no adhesions.

The intestines showed no abnormality, and the kidneys and genito-urinary tract appeared normal, but there was considerable enlargement of practically all the abdominal glands, this being more marked in the upper than in the lower abdomen.

When the thorax was opened the heart and great vessels were found to be normal, except that they were variously displaced through enlargement of the mediastinal glands, the enlargement continuing into the root of each lung. The pulmonary appearances are described below. There were no pleural effusions or adhesions. The thymus, thyroid, larynx, and pharynx were normal; the brain was not examined.

The spleen had already been removed about five and a half years previously, and at that time weighed 2 lb. 7 oz. Its general and histological appearances had been reported as typical of a Gaucher spleen.

Specimens for section were taken from the liver, from glands in various parts of the body where noticeable enlargement had occurred, from a rib, a part of the sternum, the root of a lung, a small solidified area in the lung, the kidney, the pancreas, and heart muscle.

Large masses of Gaucher cells were found in every instance of glandular enlargement, and in all the samples of bone marrow examined; the kidney, pancreas, and heart muscle were free. In the liver enormous collections of these cells appeared, pushing aside the normal liver tissue, which on the whole had undergone little degeneration. In sharp contrast, owing to its location inside the bones, the bone marrow was very largely compressed and displaced, and the total functioning marrow must have been much below normal. The changes in the bodies of the vertebrae were due to Gaucher deposition and pressure damage.

In short, the characteristic appearances were that at all possible sites reticulo-endothelial deposition of Gaucher substance had taken place with compression and displacement of neighbouring cells, but without producing further damage than would arise from compression.

The immediate cause of death was to be found in a simple terminal, mainly basal, bronchopneumonia; but the findings in the lungs had an interest beyond this, because they had clearly been involved in the primary Gaucher disease before the final infection took place.

Commentary on the Findings

This case illustrates particularly well the reasons for classifying Gaucher's disease among the reticulo-endothelioses. Not only were the liver, spleen, larger lymph glands, and the bone marrow packed with large masses of typical cells containing the non-doubly refractive Gaucher substance, but collections of these cells could be seen wherever lymph nodes occurred.

This process was found to account for the early physical signs noted in the patient's chest long before there was any indication of bronchopneumonia. At the post-mortem examination the mediastinal and hilum glands were all grossly enlarged and contained masses of Gaucher cells, with the result that the roots of both lungs were apparently extensively "invaded" by the disease, as seen by the increased root shadows in the radiographs and by the physical signs.

But another feature was noticeable, particularly in the upper lobes. In many of the small subserous and interlobular lymph nodes the reticulo-endothelial cells were loaded with Gaucher substance, producing a series of small apparently solidified areas, the neighbouring air spaces being markedly compressed. In between the compressed areas the lung tissue was relatively normal, the only change being the very recent terminal, mainly basal, bronchopneumonia. There was no evidence of old or recent tubercle, and the changes first noted clinically in the lungs were undoubtedly due to deposition of the Gaucher material, even in such outlying portions of the reticulo-endothelial system as the distal lymphatic system of the lungs.

Review of the Literature

Although, as I have stated, I have not succeeded in finding records of a case of Gaucher's disease affecting the lungs in England, one has been published in France by Merklen, Waitz, and Warter (1933) on the "maladie de Gaucher," in which typical Gaucher cells were found in the sputum. They state: "L'expectoration permanente pendant plusieurs mois de crachets muqueux, l'abondance de cellules constituant parfois des amas considérables, la proportion notable et constante de cellules de Gaucher typiques nous permettant de décrire une forme pulmonaire

de la maladie de Gaucher." The above was a typical case of Gaucher's disease affecting the spleen, liver, femora, and the vertebral column. Epistaxis occurred; the patient was 51 years of age; and anaemia was present along with leucopenia.

Although we repeatedly examined the sputum of our own patient, we never discovered Gaucher cells in it; still, the case quoted above shows that such can occur, and they therefore should be looked for.

I would like to refer here to "Studies on the Chemistry of Gaucher's Disease: An Analysis of Three Spleens," by R. H. S. Thompson and G. Payling Wright (1937). They state "that the essential pathological change is a specific storage of kerasin. Concerning the origin of this kerasin or its mode of accumulation in the reticulo-endothelial cells throughout the body nothing at present is known, but two hypotheses may be suggested for the aetiology of the condition. In the first place the distended 'Gaucher cells' may be merely the result of an absorptive action of the histiocytes on an increased blood kerasin." They continue: "An alternative theory, based on the assumption that the galactolipins are possible important intermediaries in the antibody responses of the reticulo-endothelial system, suggests itself as the result of recent work on certain aspects of immunological chemistry." They state, further: "In view of this work, therefore, it is conceivable that the galactolipins, whose physiological role in the body is at present unknown, may play a part in the production of antibodies by the reticulo-endothelial cells, and that Gaucher's disease may be some 'inborn error of metabolism' of the mechanism responsible for some stage in the antibody production of the body, whereby excessive quantities of kerasin are synthesized and stored by the reticulo-endothelial cells."

Summary

A case of typical Gaucher's disease in a little girl is described in which the spleen, liver, both femora, some of the dorsal vertebrae, lymph glands, and the lungs were affected.

The affection of the lungs by this disease must be extremely rare, for the only other definite case so far noted is quoted in the French literature.

The most recent views on the pathological chemistry of Gaucher's disease are stated.

In the Special Plate photomicrographs are reproduced of sections of the liver (Fig. 1), a lymphatic gland (Fig. 2), the bone marrow of a rib (Fig. 3), the spleen (Fig. 4), and the lung (Fig. 5). Fig 6 is a reproduction of a radiograph taken four months before death and showing clearly the extension of the Gaucher process from the mediastinum outwards and to the apices. Ludwig Pick (1933) states that in fresh specimens the Gaucher cells are homogeneous, opaque, and dull hyaline in appearance. With the Mallory stain, with acid-fuchsine, and aniline-blue-orange G, and with previous fixation with picric acid and ammonium bichromate, they appear a light blue, and under higher magnification show, in their cytoplasm, an irregular network, bound like spider webs with the finest thread-like fibrils. Through these the cytoplasm appears wrinkled rather than foamy or roundly vacuolated. The wrinkles correspond to the remains of the spongioplasm in the meshes of which the Gaucher substance is stored. Large cells with this type of cytoplasm are found in no other affection. The cells measure from 20 to 80 μ in their largest diameter; they are polymorphous, and are often furnished with projections. The nuclei are either single or multiple, and not infrequently are quite numerous (there were twenty-one in one cell). They are mostly pyknotic. In those cells where there is a single nucleus it is often eccentric in position, generally near the cell border. Mitoses are disputed. Pick found arterial branches within the nests of Gaucher cells.

REFERENCES

Merklen, P., Waitz, R., and Warter, J. (1933). *Ann. de Méd.*, **33**, 97.
Pick, Ludwig (1933). *Amer. J. med. Sci.*, **185**, 453.
Sobotka, H., *et al.* (1933). *Biochem. J.*, **27**, 2031.
Thompson, R. H. S., and Wright, G. Payling (1937). *Guy's Hosp. Rep.*, **87**, 30.

TEMPORARY POSTPONEMENT OF MENSTRUATION BY OESTRADIOL BENZOATE

BY

GEORGE L. FOSS, M.A., B.Ch.Camb.

Colston Research Fellow; Clinical Assistant to the Gynaecological Department, Bristol Royal Infirmary

(WITH SPECIAL PLATE)

There are occasions when a temporary postponement of menstruation would be a great advantage. I refer to such times as athletic championships, examinations, and weddings, when a condition of bodily comfort and peace of mind is essential, and this cannot be if these events coincide with menstruation. In such cases I suggest that the delay of menstrual bleeding for a few days or a week is a justifiable therapeutic measure on a few special occasions of a woman's life; but I do not think it is a practice to be carried out more than once or twice during an individual lifetime, as it may be unwise to upset the normal delicate pituitary-ovarian rhythm too frequently.

The idea of such therapy arose from the treatment of some of a series of cases with oestradiol benzoate.* It was found that if injections were carried out through the whole cycle the next bleeding was delayed or even inhibited. In some cases of oligomenorrhoea and hypomenorrhoea treatment was sometimes followed by a short period of amenorrhoea. In such cases bleeding might be delayed if injections of 10,000 I.B.U. were repeated, whereas in patients with normal loss this occurred if dosage was raised to 50,000 I.B.U. This is explained by Zuckerman's work (1936) on the production of uterine bleeding by oestrin withdrawal. Cyclical treatment of cases of oligomenorrhoea was not followed by amenorrhoea when 50,000 I.B.U. were given only in the first fifteen days of the cycle.

Zuckerman (1936), working with monkeys, showed definitely that if oestrone is given for a period of fifteen days in a dosage known to be adequate for proliferation, and is then withdrawn, bleeding will occur about seven to eight days later. If this threshold dose is continued throughout the cycle bleeding is postponed for as long as the dose is kept above threshold. If allowed to drop below, either by reducing dosage or by increasing the interval between injections, bleeding would occur. Zuckerman (1936) suggested that if superthreshold doses were given throughout the cycle ovulation was inhibited and the proliferation phase was continued. If injections were started after the middle of the cycle following ovulation it was doubtful whether oestrone would then inhibit bleeding. Evidence was inconclusive on this point even from Zondek's series (1936). If given after the middle of the cycle it was necessary to use much larger doses to cause inhibition. B. Zondek (1936), in the series referred to, noticed that during therapeutic enlargement of hypoplastic uteri of sterile women the next bleeding was often delayed if moderate doses were continued through the

* Oestradiol is six times as physiologically active as oestrone. The standardized preparation used in this work was progynon B oleosum—Schering.

cycle. When started in the first half of the cycle the stage of proliferation is continued, if dosage is greater than threshold value, into one of endometrial hyperplasia and ovulation is inhibited, so that bleeding takes place after oestrin withdrawal from a proliferative phase and not from the usual secretory or premenstrual endometrium. This may be due to inhibition of the anterior pituitary. There is some evidence that even after the corpus luteum is atrophied bleeding does not occur until after withdrawal of oestradiol. Now is it possible to use these facts and theories to delay normal menstruation for social reasons, and is it likely to do any harm? To be a practical success it is a disadvantage for injections to be given every three days throughout the cycle. It is simple to postpone menstruation if 50,000 I.B.U. are given in this way, but injections of 10,000 I.B.U. are not certain in their results, as demonstrated by Cases I and II.

Case I

This woman, aged 22 and married, whose menstrual history was regular every twenty-seven to thirty days, was treated with oestradiol benzoate for intrinsic dysmenorrhoea. First injections of 10,000 I.B.U. given every four days throughout the cycle failed to inhibit bleeding. Following this menstruation the dose was increased to 50,000 I.B.U. throughout the cycle every four days at first, then towards the end of the cycle injections were given on alternate days over a total period of thirty-five days. Seven days after withdrawal bleeding started.

The necessity for injections being nearer together and of large dosage if treatment is started after the fourteenth day was demonstrated in this same case, in which failure occurred in a later attempt when injections were spread out too much.

The irregularity of the menstrual cycles in this case following experimental delay of bleeding was due to treatment for dysmenorrhoea being continued. Trials were given to progesterone at the end of the cycle just prior to menstrual flow, and also to oestradiol benzoate in the second half of the cycle, the details of which are irrelevant and therefore not published in this paper.

Case II

This patient, an unmarried woman aged 22, was treated for intrinsic dysmenorrhoea, and the menstrual history was regular, 4-5/28. The menstrual flow ceased the day before treatment was started. Injections of 50,000 I.B.U. were given twice weekly for thirty-four days and then bleeding started two days later and lasted ten days. The effect was temporary only, and subsequent menstruation was normal.

For practical purposes it is desirable to give injections in the second half of the cycle only, when Zuckerman (1936) was doubtful as to its success owing to the previous occurrence of ovulation. However, I have succeeded in postponing menstrual bleeding for some days after starting injections on the nineteenth day after the cessation of the last bleeding, which was proved by curettage to be from a secretory-phase endometrium. In this case dosage was 100,000 I.B.U., given on alternate days. This is necessary to maintain a high concentration of oestradiol benzoate, which has been shown by Mazer and Israel (1937) to fall four days after an injection. It is therefore necessary to give a large dose and to give it on alternate days. Some idea of the dose which should be necessary can be gauged from the usual menstrual loss expressed in number of diapers and number of days of bleeding. The threshold dose is probably greater in patients with more copious loss.

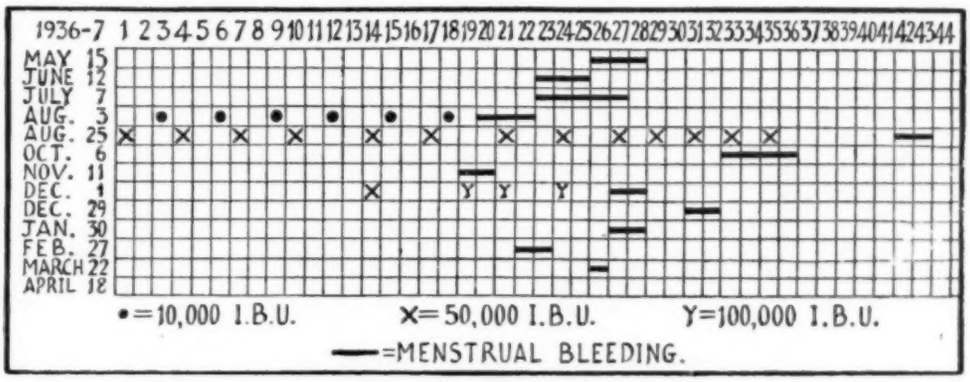


CHART 1.—Menstrual Record of Case I.

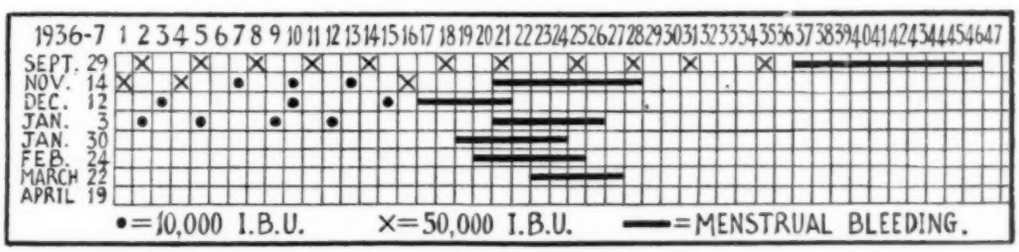


CHART 2.—Menstrual Record of Case II.

Case III

This patient, an unmarried woman aged 32, had been treated for irregular menstruation for seven months with oestradiol benzoate. Her usual cycle varied between twenty-eight and thirty-five days, and when she came for treatment this had lengthened. I selected this case for trial, as menstruation was apparently corrected by treatment and her record of menstrual function was preserved. She was curetted on the first day of bleeding, which was twenty-six days after the last day of the previous menstruation. Ovulation had obviously occurred, as the pathological report showed that she was bleeding from a secretory-phase endometrium. Accordingly nineteen days after this bleeding finished—long after ovulation was thought

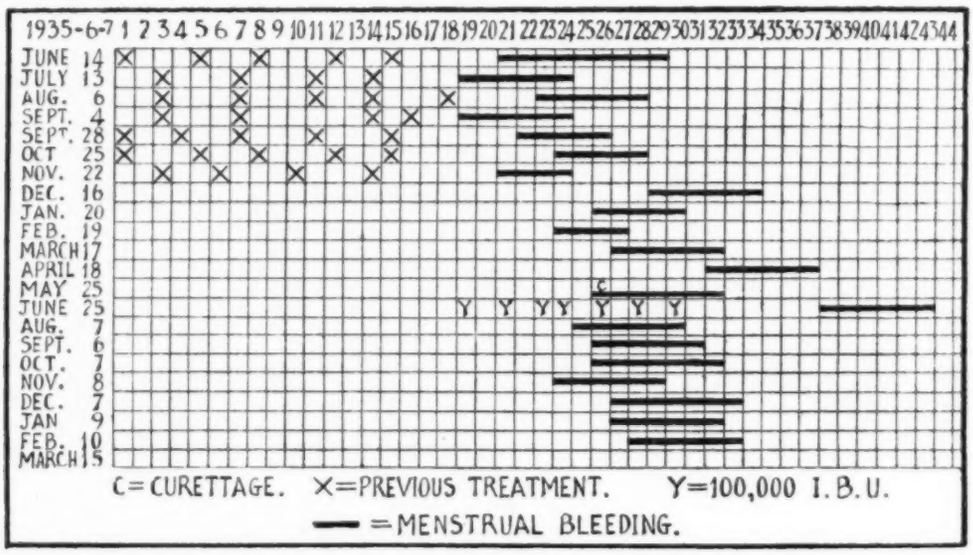


CHART 3.—Menstrual Record of Case III.

to have taken place—I started giving oestradiol benzoate injections. 100,000 I.B.U. were given on alternate days, amounting in twelve days to a total dose of 700,000 I.B.U. Following the withdrawal of oestrin on the thirtieth day of the cycle bleeding occurred eight days later and lasted six days.

This cycle was forty-three days as against thirty days, the average of twenty cycles. It is evident, then, that I succeeded in postponing bleeding for eight days, and treatment had been started at least five days after the probable date of ovulation. No deleterious effect was produced, and it can be seen on referring to the menstrual record that there was no interference with the regularity of the subsequent periods.

The pathologist reported a typical menstrual mucosa with the cytogenic stroma cells showing marked menstrual or decidual reaction (see Plate).

In cases where the menstrual loss is usually slight 50,000 I.B.U. on alternate days, when started after the fourteenth day, is sometimes successful, although it is wiser to give this daily after the first few injections and towards the expected time of onset.

Case IV

An unmarried girl, aged 21 years, previously treated for dysmenorrhoea, was taken for trial, as her menstrual record was particularly regular. This time small dosage was tried, and was again started long after the normal time of ovulation, but in this case I had no record of the endometrium. Injections of 50,000 I.B.U. were begun on the nineteenth day after the cessation of the last bleeding. 200,000 I.B.U. were given in eight days, and this was sufficient to postpone bleeding during the time injections were administered, but it followed two days after the last injection.

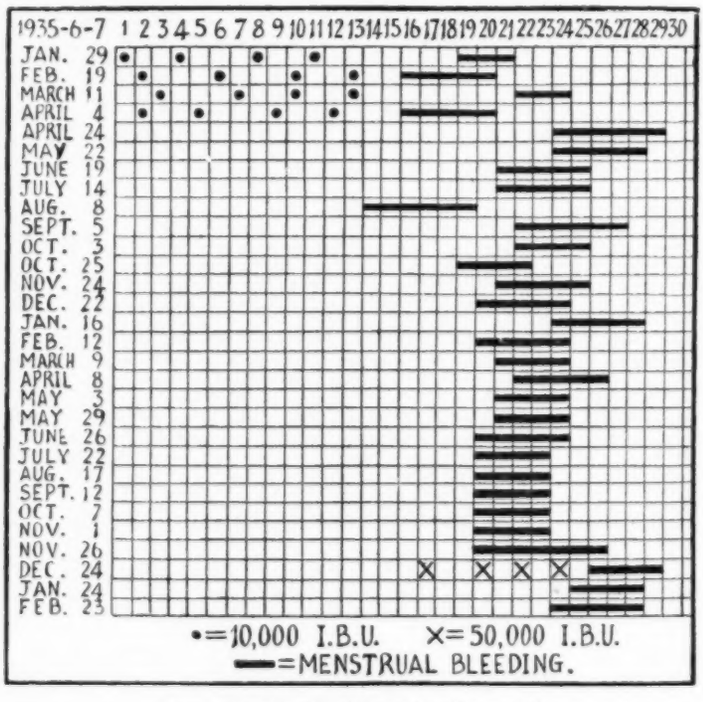


CHART 4.—Menstrual Record of Case IV.

Commentary

Zondek (1936) says that no ill effect was found in his cases, and so far no harmful effects have resulted in any of my series. Occasionally, as in Case I, the subsequent menstruation also is delayed, but usually the normal rhythm returns at once. An occasional postponement of some days does not seem likely to upset the pituitary-ovarian rhythm, as in many people menstruation varies a few days each time. A temporary inhibition of the anterior pituitary by oestrin does not seem deleterious, according to my experience of large doses.

One small point in technique is important. It is essential when injections are given, especially in obese patients, to make certain that there is no leakage from the tissues. The oily solution of oestradiol benzoate should be deeply injected intramuscularly, preferably in the buttock and with the needle in an oblique direction. On withdrawing the needle the skin should be pinched up with the thumb and forefinger of the left hand to approximate firmly the walls of its track. Unless these small points are rigidly observed failures may occur, as there is a tendency for leakage of the oily solution, with consequent drop in dosage. It has the same effect as oestrin withdrawal, or as giving injections at too infrequent intervals, by reducing the level below a threshold value. The essence of this therapy is to maintain a high superthreshold level of oestradiol benzoate until after the time when menstruation is expected.

Summary

1. Postponement of menstruation temporarily is occasionally justifiable.

2. Inhibition of menstruation is simple by continuing therapy with 50,000 I.B.U. throughout the cycle at intervals of three to four days.

3. It is possible to postpone menstruation when injections are started, after ovulation has probably occurred, at about the nineteenth day of the cycle, but dosage must be greater, such as 100,000 I.B.U., and the intervals should be shorter.

4. There are no harmful effects.

5. The technique of injection is of great importance.

BIBLIOGRAPHY

Cameron, A. T. (1936). *Recent Advances in Endocrinology*, London.
Mazer, C., and Israel, S. L. (1937). *J. Amer. med. Ass.*, **108**.
Robson, J. M. (1934). *Recent Advances in Sex Physiology*, London.
Zondek, B. (1936). *Wien klin. Wschr.*, **49**, 455.
Zuckerman, S. (1936). *Lancet*, **2**, 9.

Clinical Memoranda

Schamberg's Disease

(WITH SPECIAL PLATE)

In view of its comparative rarity the following case of Schamberg's disease is worth recording.

A Parsee lady of middle age attended the skin clinic of the J.J. Hospital complaining of a peculiar rash on the legs and forearms of about eight months' duration. Apart from the disfigurement the rash caused, there were no subjective symptoms. Careful inquiry elicited that the rash started in the form of minute puncta of bright red colour on the anterior surfaces of both legs immediately below the knees, and gradually spread downwards, involving the upper two-thirds, and also spread to the forearms. The lesions gradually faded, leaving behind a brownish pigmentation which in its turn slowly disappeared, the skin assuming its normal colour. The complete disappearance of the lesions was seen only on a limited area of the skin. A certain amount of telangiectasis was also noticeable (see Plate).

When the patient first came under my observation the disease was fairly well advanced, and coalescence of individual lesions had occurred, leading to the formation of brownish patches. New lesions were still coming out, and a few bright red pinpoint puncta at a distance from the original eruption were present. Apart from the rash clinical examination revealed no other abnormality. Teeth, tonsils, ear, nose, and throat were normal, and no evidence of septic focus was found anywhere. The platelet count was normal and the Wassermann reaction negative.

Schamberg's disease constitutes one of a group of diseases of unknown aetiology which include Majocchi's disease, purpura annularis telangiectodes, and poikilodermia atrophicans vasculare, and which are provisionally classified by some amongst the purpuras. Histological examination shows the chief seat of the disease to be in the subcapillary layer of the corium, where a mild degree of inflammatory reaction and deposition of a pigment—shown by Kingery to be an iron derivative—are present.

I am indebted to Major S. L. Bhatia, I.M.S., for allowing me facilities for taking photographs of the patient.

R. A. DESAI, M.B., B.S., M.R.C.P., M.R.C.S.,
Hon. Junior Dermatologist, J.J. Hospital.
Bombay.

Craniocleidodysostosis in a Boy of 7

(WITH SPECIAL PLATE)

The history of the case is as follows:

The child was a forceps delivery. He had a moderate degree of hydrocephalus with bulging of the anterior fontanelle. Eight days after delivery there were convulsions, which disappeared in a fortnight.

At the time of writing the boy attends school and appears to possess normal mental faculties consistent with his age. His only symptom is fatigue after walking moderate distances.

Examination revealed the following:

Only one and a half inches of the left clavicle was palpable on its medial end. Of the right clavicle I could only palpate about half an inch of its medial end. No portion of the clavicles was palpable laterally. There was an extremely wide range of movement of the shoulders. Both shoulders could be made to touch anteriorly in the midline. A definite depression about the size of a shilling could be felt in the region of the anterior fontanelle. The base of this depression did not yield to the palpating finger. There were no other abnormalities elsewhere.

X-ray examination revealed a thin cranial vault and displayed a definite depression in the region of the anterior fontanelle. At the base of this depression there was an extremely thin layer of bone. The clavicles appeared as two rudimentary medial ends which were extremely small in proportion to the chest wall.

LÉON FEINSON MULDAVIN, M.R.C.S., L.R.C.P.,
Royal Free Hospital, London. Casualty Officer.

A Case of Calcinosis

(WITH SPECIAL PLATE)

The following report of a case of calcinosis circumscripta may be of interest.

A girl aged 13 years first came under notice on January 27, 1936, and was found to have a fluctuating swelling about the size of a pigeon's egg on the upper and outer side of the right small toe, with the tract of a sinus opening on the sole of the foot and discharging a creamy, chalky-looking substance. Nodules were found on many of the digital joints of both hands, left elbow, and left knee (see Fig. 1, Special Plate), also on the points of some of the fingers. Her family history revealed nothing of interest. There was no tuberculosis, rheumatism, or gouty tendencies, and no history of a similar condition in other members of the family or relatives or friends.

Apart from a minor degree of anaemia and debility her health had been fairly good. She had had a lump, possibly a sebaceous cyst, removed from the scalp in 1933, and a swelling at a finger-joint the same year. This had been incised and the contents expressed. Similar swellings had made their appearance about this time, involving the joints now affected. The swelling on the foot was incised twice, and once the chalky contents were cleared out the wounds healed rapidly, leaving little scarring and no impairment of the joints. The contents of a nodule excised from the left elbow and examined microscopically appeared similar to those of a sebaceous cyst, but the chemical analysis showed a high calcium content. A sebaceous cyst excised from another patient contained no calcium. *X*-ray examination showed dense shadows at the site of the nodules (see Fig. 2)—particularly in the right foot, in both hands, and in the left knee—typical of the condition described as calcinosis circumscripta by Dr. D. W. Brooks in the *Quarterly Journal of Medicine*, July, 1934.

A. J. CLEVELAND.
A. P. AGNEW.
Norwich.

Fatal Coronary Thrombosis in a Man Aged 23

(WITH SPECIAL PLATE)

The following case is worthy of record owing to the youth of the patient.

A Tamil manual labourer, while on his way to work at about 7 a.m. on January 4, 1937, complained of severe pain in the chest and left arm, and collapsed. He was attended to at a dispensary and brought to the General Hospital, Colombo. When seen at the out-patients department at 8 a.m. he had pain in the left shoulder and arm, but the symptoms of collapse had passed off. He was admitted under my care, and reached the ward in a moribund condition, with cold, clammy extremities and imperceptible pulse. He died at 8.25 a.m.

No history of previous rheumatic fever or heart disease could be obtained. A diagnosis of coronary thrombosis was suggested, and a post-mortem examination was made by the Judicial Medical Officer of Colombo, Dr. N. Sinnadurai, who has supplied me with the enclosed photograph and the following note on the appearance of the heart.

"The left ventricle showed globular dilatation. The valves were intact and the musculature appeared healthy to the naked eye. In the beginning of the descending branch of the left coronary artery of the heart there was an ante-mortem thrombus about a quarter of an inch long, attached to the wall of the vessel. The distal portions of the vessel below the thrombus showed whitish atheromatous plaques. There were similar plaques also in the right coronary artery. Death was due to coronary thrombosis."

In 1935 a case of coronary thrombosis with recovery in a patient aged 24 years was reported from the wards of the late Dr. E. Garvin Mack by Dr. P. B. Fernando, medical registrar of the General Hospital, and an account of it was given in this *Journal* (1935, **1**, 976). The present case, as far as I am aware, is the youngest on record, since this patient was born on January 3, 1914, and was therefore 23 years and 1 day old at the time of his death.

JOHN R. BLAZÉ, M.D., M.R.C.P.,
Colombo. Senior Physician, General Hospital.

An Obscure Case of B. Coli Peritonitis

This case, that of a girl aged 5 years, one of female twins, first came under notice at 8 p.m. on October 1, 1936. The history was as follows:

CASE HISTORY

The child complained of abdominal pain while out walking the previous day, about midday, and vomited. She was taken home and put to bed, and her condition improved, although slight pain in the region of the umbilicus persisted. She vomited a second time after an evening meal of bread-and-milk. The temperature was taken by the mother, an ex-surgical sister of a London teaching hospital, and was found to be normal. The child had an undisturbed night and slept well. The next day she seemed fairly well but still complained of slight abdominal pain, and the mother administered a dose of castor oil, resulting in an offensive yellow fluid stool. The pain persisted, and although the temperature remained normal it was decided to have medical advice. On cross-examination of the mother it was elicited that the child had been passing offensive stools for some days, and that for the past year or two the breath had on occasions been offensive. There was no history of worms, and the patient had previously been perfectly healthy. On examination the temperature was found to be 98.4° F.; the pulse was 120. The child was pale but bright and composed. There was slight rigidity of the right side of the abdomen and a little tenderness in the right iliac fossa. The tongue was furred.

The patient was removed to the Chesham Cottage Hospital, and after consultation it was decided to perform appendicectomy. The abdomen was opened by a muscle-splitting technique. The appendix when exposed to view showed only a slight thickening of the tip and a little injection of the superficial capillaries. There was no exudate and no sign of peritonitis. The appendix was removed and the stump invaginated in the routine manner. The abdomen was closed without drainage. On opening the appendix it was found to contain numerous threadworms and a little offensive pus; there were also a number of submucosal haemorrhages. The child did well for a week following the operation, but occasionally complained of a little pain in the region of the wound. She continued to pass very offensive pale yellow fluid stools.

About six o'clock, however, on October 8 she complained of severe generalized abdominal pain. The temperature rose to 101° F., and the pulse to 130. On examination there was general rigidity of the abdominal wall and tenderness, which appeared to be most severe over the descending colon. The operation wound was clean and healing normally. A blood count showed 15,000 leucocytes, of which 89 per cent. were polymorphonuclear leucocytes. It was decided to reopen the abdomen, and this was done through a right paramedian incision. The small intestine and omentum were found to be intensely injected, and about an ounce and a half of thin greenish-yellow odourless pus was evacuated. There was no evidence whatever of any infection from the site of the appendix operation, and the wound was soundly healed. No perforation of the intestines was discovered. A specimen of the pus was obtained and the abdomen was closed; two drainage tubes were inserted into the lower part of the wound reaching well down into the pelvis. The child has since made an uneventful recovery, and there has been no trace of threadworms in any of the stools, which have ceased to be offensive. The pus obtained from the abdomen grew a pure culture of *B. coli*. Agglutinations of serum against typhoid and paratyphoid A and B were negative.

DISCUSSION

The case would appear to present one or two unusual features. In the first place the mother, a woman of considerable nursing experience, was positive that the child had never passed any threadworms, and quite certainly no threadworms were passed in hospital. Secondly, it seems difficult to account for the presence of sufficient numbers of *B. coli* in the peritoneal cavity to cause a general peritonitis a full week after the removal of the appendix. If the peritoneum had become contaminated during the first operation, which seems very unlikely, it is hard to imagine why the onset of the peritonitis was delayed. As previously stated, there was no evidence at the second operation of the trouble arising from a leakage from the appendix stump.

It is well known that in children pneumococcal peritonitis may develop as a secondary manifestation to pneumonia complicated by empyema, and streptococcal septicaemia may be complicated by acute peritonitis, the infection being conveyed by the blood stream. In this case of diffuse *B. coli* peritonitis no precise focus of infection could be found surgically, but it is established that the child was passing extremely offensive stools prior to the development of peritonitis, and it is probably correct to conclude that (1) an intense *B. coli* infection was present in the colon, and (2) that a secondary *B. coli* peritonitis supervened, either via the blood stream or else by direct permeation through the walls of the colon.

H. T. S. WISE, M.R.C.S., L.R.C.P.
W. B. GABRIEL, F.R.C.S.

Reviews

CALMETTE'S BOOK ON TUBERCULOSIS

L'Infection Bacillaire et la Tuberculose chez l'Homme et chez les Animaux. By A. Calmette. Fourth edition, revised by A. Boquet and L. Nègre. (Pp. 1,025; 70 figures, 24 coloured plates. Broché, 150 fr.; cartonné toile, 175 fr.) Paris: Masson et Cie. 1936.

Though first published as recently as 1920, Calmette's monumental book can be termed a classic in tuberculosis literature. A second edition appeared in 1922, followed by a third in 1928, and an English translation of the former was published in 1923. The last nine years have witnessed much work and controversy on certain pathological aspects of tuberculosis; the fourth edition, just issued, is therefore timely. The death of Calmette in 1932 left the task of revision to be done by Boquet and Nègre, heads of departments in the Pasteur Institute and collaborators of Calmette in the previous edition. It was inevitable that the wish to retain the spirit of the original author and the structure laid down by him should have induced Boquet and Nègre to avoid making drastic changes, changes that would have greatly increased the value of the book. This applies particularly to views held by Calmette in the face of much opposition. Thus the section on B.C.G. vaccination is hardly altered; too little note is taken of the work criticizing the method, and the lack of thorough revision is seen in the following:

"In July, 1921, a first infant fatally destined to tuberculous infection by reason of its inevitable cohabitation with a phthisical grandmother, ingested three doses, on the third, fifth, and seventh day after birth, of 2 mg. of B.C.G. each time (totalling 6 mg., or 240 million bacilli). No untoward incident followed. This child, though brought up in an infected environment, has developed normally. *It is now five and a half years old* [reviewer's italics] and remains in perfect health."

On the other hand, it is good to note the more cautious attitude adopted in regard to the filterable form of the tubercle virus. In fact, the term "ultravirus" no longer appears in the index. Special chapters of this edition are devoted to culture on sympathetic media, to dissociation, to the avian type of the bacillus, to spontaneous tuberculosis in rabbits and guinea-pigs; and some chapters are much fuller—for instance, that dealing with the chemical constitution of the bacillus. The book contains an enormous amount of information, and the best parts are those concerned with purely bacteriological aspects. The section on morbid anatomy, as in the third edition, is sketchy, and in it is ignored the most recent work of German authors, work that has thrown much light on the evolution of pulmonary tuberculosis. Indeed, in the whole book there is too great a tendency to favour French authors, even when their work has not withstood criticism from elsewhere.

Many hundreds of references are given; nevertheless statements are often made without mentioning their source. Thus we should be interested to know when "in London G. Lissant Cox and A. Salusbury MacNalty of the Ministry of Health have found, in one dispensary alone, a mortality of 22 per cent." (0 to 1 year—in children born of tuberculous mothers, remaining in contact with the mothers, under the supervision of health visitors). The usefulness of the book is, moreover, much diminished by the absence of an index of personal names.

The controversy round B.C.G. and the "ultravirus" should not make us forget the excellent work done by Calmette on other aspects of tuberculosis; and the book can therefore be recommended to those who will be able to separate the wheat from the chaff.

NATIONAL INTELLIGENCE

The Fight for our National Intelligence. By Raymond B. Cattell, M.A., B.Sc., Ph.D. With introductions by Lord Horder, Major Darwin, and F. P. Armitage. (Pp. 166. 8s. 6d. net.) London: P. S. King and Son. 1937.

Population, physique, intelligence, character, present four of the major problems of Western civilization which are at last beginning to attract national attention in this country. They are not really separable problems, but parts of one whole; each calls for a good deal of attention to the others. Yet a full study of that whole, however enhanced in value by its comprehensiveness, is still awaited and is bound to be bulky, and any serious consideration of one of its parts can meanwhile be welcomed. Such consideration of the subject of national intelligence is contained in a portion—far too small a portion—of Dr. Raymond Cattell's book. It is a serious study in that it describes a painstaking psychological and statistical investigation of intelligence in a limited population in definite areas, alleged to be typical. It has the merit, too, of not ignoring altogether, as some inquiries have done, the question of population decline and of character as distinguished from intelligence. But, as the author himself points out, the inquiry depended upon "the unaided efforts of a single investigator," and was "limited to a total expenditure of £250." Under these conditions testing was confined to 10-year-old children only, and these in but 3,734 families. Controls were lacking. Doubtless it was not possible to do much more, but these are very meagre materials on which to base the dogmatic and far-reaching conclusions to which the investigator invites us. There is another inquiry now proceeding of a not dissimilar character, but with ampler means and of a more comprehensive and scientific nature, and it would be wise to suspend judgement at least until the results of this are published.

The very title of the book suggests a bias. There are no fewer than five introductions, including the author's own "foreword" and his first chapter entitled "The Twilight of Western Civilization?" Lord Horder's introduction is commendatory but careful. "Assuming no fallacies to be present," he says, "the evidence seems overwhelming." Yet he speaks of Dr. Cattell's "discovery" and strains credulity when he claims that "careful perusal of the conditions of the research and of the argument does not reveal any obvious fallacy in either." Major Leonard Darwin begins with an absurdity—"It has been conclusively proved by many inquiries that for many years past the average child has been living in a worse home than the average parent"—and continues with a clear *non sequitur* in the majority of his paragraphs. Mr. F. P. Armitage assumes as postulates statements clamouring for discussion; and the author himself discloses a tendency to find only what he sought, and to square conclusions with his preconceptions. But if the book be read throughout in a cautious and alertly critical spirit much of it will be of value. Its facts are helpful, though by no means conclusive. Its arguments are well stated, though often specious. Its inference that our national intelligence has, since about 1875, been rapidly decreasing through a differential birth rate, whereas up to that time it had been increasing through a differential death rate, is not established. The remedies suggested for such decline as there may be are perhaps more moderately stated than would

seem to be justified by the course of the discussion. The only logical remedy, if Dr. Cattell's statements are accepted at their face value, would be the compulsory sterilization of the whole of the "subcultural" or "social problem" group, in which he sometimes seems to include most of our elementary school children; whereas he would rely mainly upon universal knowledge and practice of birth control. He is wise enough, however, in addition, to advocate the positive and active encouragement of maternity among those of higher intelligence to the extent of families of three or four children, and to urge that psychological as well as economic means should be used to this end.

Dr. Cattell points out that "no service is done by exaggerating or indulging in the prophecies of a scaremonger." It seems inconsistent to follow this with the assertion that "through a *complete* practice of birth control, extending to the lowermost sections of the population, mankind could leave behind for ever, within the space of this century, the aimless suffering, the vacillating advance, and chronic relapses which have characterized civilization since the culture of Sumeria first blossomed."

HAEMODYNAMICS

Physiology and Pathology of the Heart and Blood Vessels. By John Plesch, M.D., L.R.C.P. & S.Ed. (Pp. 188; 15 figures. 15s. net.) London: H. Milford, Oxford University Press. 1937.

Dr. John Plesch, author of this work on the heart and blood vessels, dedicated to his friend Albert Einstein, is described as professor of internal medicine in the University of Berlin without any qualifications such as emeritus or "formerly." He has written much, and the present volume, which is described as a development of his *Haemodynamische Studien*, published in 1909, is divided into two almost equal parts—on the physiological and pathological aspects—being intended for practitioners as well as for physiologists. It illustrates the importance and the value of the application of the ancillary sciences, in this instance haemodynamics, to medicine. But for the ordinary medical man "the fundamental mathematical formulae" to which he is at once introduced in the first chapter may present a somewhat formidable proposition. But however this may be, a diagram explaining the venous pressures in different positions—the erect and recumbent postures—clearly illustrates in the same chapter the practical remarks on the avoidance of air-embolism in the course of intracranial operations.

The blood volume and the less-known distribution of blood in the various vascular areas are passed in review. Much attention is paid to the capillary circulation. Very different estimates of the absolute capillary blood volume have been given: the author arrives at this figure by subtracting from the total blood volume of four and a half litres the estimated capacity of the remainder of the cardiovascular system. The flow of blood through the capillaries is "turbulent," the particles pursuing an irregular path without any fixed relation to the axis of the stream and in contrast to a "laminary" flow. The number of open capillaries is regulated by the metabolic activity of the tissues; thus in toxic goitre the raised metabolic rate dilates the blood capillaries so as to reduce the diastolic pressure 15 to 25 mm. Hg below its normal level. The problems of blood pressure receive full consideration, and it is suggested that general attention has not been directed to the characteristic rise of diastolic pressure in hypertension due to renal disease. Some doubt is expressed about the site of the responsible resistance, and the author appears inclined to place it in the kidneys rather than in the general periphery.

In the section on chronic diastolic insufficiency or "decompensation" it is pointed out that the term cardiac decompensation is not infrequently applied to cases in which the responsible factor is not in the heart. Although the author insists that the common disorders of the circulation can be explained on a mechanical basis without reference to lesions of the cardiac valves, he devotes the last chapter to a critical analysis of the orthodox views of valvular disease. This is an authoritative and thought-stimulating book by one who has devoted much time and thought to the subject.

EPIDEMIOLOGICAL STUDIES

Seuchenentstehung und Klimaforschung, and *Die Entstehungsursachen der Haffkrankheit.* By Dr. med. Friedrich Wolter. (RM. 3.75 and RM. 4.50.) Stuttgart: Hippokrates Verlag. 1936.

Dr. F. Wolter, director of the Hamburg Institute for the Study of Epidemiology, in two recent brochures, volumes 5 and 7 of the series Kleine Hippokrates-Bücherei, continues his travels along paths first broken by Pettenkofer. In volume 5 he seeks to bring epidemiological happenings into relation with the long- and short-waved climatological movements postulated by Brückner. As will be remembered, the late Sir William Hamer was an enthusiastic student of Brückner cycles, and there is no reason to doubt that work in this field is of importance. At its present stage the papers seem rather suggestive than convincing—perhaps because the workers are few and precise numerical data scanty.

Volume 7 deals with a more sharply defined problem—namely, the nature and origin of the remarkable epidemics christened *Haffkrankheit*, which mainly affected fishermen on the Frisches Haff, a narrow gulf communicating with the Baltic and in the neighbourhood of the cities of Königsberg and Danzig; in 1924 there were 600 cases with six deaths, in 1925, 176 with five deaths. The symptomatology of the illness closely resembles that of the better-known epidemic myalgia, but the general opinion in Germany has been that the origin was a form of fish poisoning. Dr. Wolter, however, identifies the new epidemics with an outbreak of 1529 in the Gulf of Stettin, and, as the Frisches Haff is heavily polluted by sewage and factory outflows, finds a basis for subsoil action. His arguments may not be wholly convincing, but the facts cited are suggestive.

THE CLINICAL PSYCHOLOGY OF CHILDREN

Clinical Psychology. A Handbook of Children's Behavior Problems. By C. M. Louttit. (Pp. 695; illustrated. 12s. 6d. net.) New York and London: Harper and Brothers. 1936.

When the author of this book was obliged some years ago to plan a teaching course in what is called clinical psychology he found its scope difficult to define. Clinical psychologists deal with all kinds of activities from the devising of mental tests to deep analysis, with patients of all ages, with problems of child training, delinquency, mental deficiency, mental disease, vocational guidance, and a hundred others. He found no single book which gave a systematic survey of the whole subject. Books which purported to deal with psychology in general were deeply tainted with bias, and none gave an adequate idea of the vast field of specialized books and papers that now exists. He has therefore tried to meet this need, and he has very fairly succeeded—surprisingly, considering the handy size of his book.

He begins by suggesting practical methods for history-taking, examination, and psychometry, and then deals in the remaining three parts of the book with three broad classes of problems: those correlated with abilities and with organic disabilities, and problems of behaviour. One important consideration which governs his approach is that clinical psychology goes far beyond psychology as a science, and the work of the clinical psychologist is intimately bound up also with medicine, education, and sociology: he deplores the absence of any academic curriculum which gives the student a grounding in even the broad essentials of these sciences. He confines the book to the problems of children, because he regards the psychology of the child as the very foundation of adult psychology and the reactions of the child as the foundation of adult behaviour. Although he has been severely restricted in his compass he boldly introduces concrete examples on every page, and the student will probably learn as much from this book as from any other single work that has appeared recently.

Notes on Books

Quelques Verités Premières (Ou Soi-Disant Telles) en Pneumologie Clinique, by Professor EMILE SERGENT (Masson, 24 fr.), is one of a series on various branches of medicine and surgery published under the general editorship of Professors Ombrédanne and Fiessinger of Paris. The intriguing title which, except for the name of the branch discussed, is common to the whole series is explained in the preface written by the editors. Their aim is to give the readers the essential clinical and therapeutic facts which can *at present* be considered as definitely established. Their choice of Professor Sergent for the volume on diseases of the lungs was a happy one. The result is a collection of statements, aphorisms, and counsels based on extensive clinical experience from which the human element is never dissociated, which is written in a style that attracts the reader and emphasizes where emphasis is needed. The following is a good example: "Though the first impression is *often* the best, it is unreasonable to bow down before the aphorism which insists that it should *always* be the best." There is, however, a fly in the ointment. The book is very attractively produced, but the type appears to have been chosen without any regard to reading comfort. The text is wholly in italics, ordinary type being used for certain terms and for emphasis; and even this is carried out somewhat at haphazard.

In the biography entitled *The Life and Convictions of William Sydney Thayer, Physician* (Oxford University Press, 10s. 6d.), Mrs. EDITH GITTINGS REID, the author of a life of Sir William Osler, has given a sympathetic account of Osler's successor in the chair of medicine at Johns Hopkins University, with numerous extracts from his diaries and correspondence. In addition to relating his activities at Johns Hopkins, where his principal contributions to medicine dealt with malaria, typhoid, and bacterial endocarditis, Mrs. Reid gives a vivid account of his experiences and hairbreadth escapes as a member of the Red Cross Mission to Russia in 1917 and as a consultant in the following year to the American Expeditionary Force in France. Thayer was well known in this country, where he was made orator and gold medallist at the Bright Centenary celebration, Foreign Honorary Fellow of the Association of Physicians, and LL.D. of the University of Edinburgh. In France he delivered an address at the Sorbonne in 1923 on "The Contribution of Pasteur to Medicine," and was elected on that occasion Officer of the Legion of Honour and four years later Commander. He was also Laennec Lecturer and Doctor *honoris causa* of the University of Paris and co-editor of the *Archives des Maladies du Cœur*. The text is accompanied by striking portraits of Thayer as professor, military consultant, and amateur fisherman.

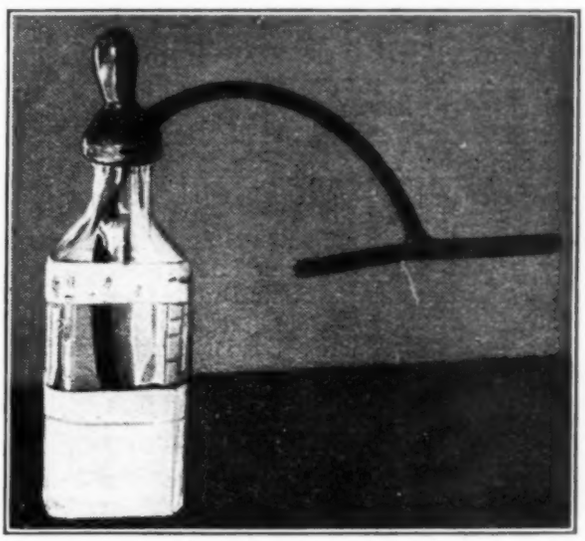
Those who wish to keep abreast with current medical literature will be interested to know that this can be obtained from a new publication, *Current Titles from Biological Journals*, edited by L. R. KUHN of the University of Chicago. It is issued monthly, and can be obtained on application to 5603, Drexel Avenue, Chicago, Illinois, the subscription being 1.50 dollars for the remaining months of 1937. This monthly reproduces the main contents of many of the principal biological journals of the world, and medical periodicals are well represented.

Preparations and Appliances

CONTINUOUS BILIARY DRAINAGE

Mr. MALCOLM H. V. CAMERON, F.A.C.S., F.R.C.S.Can., writes from Toronto:

One of the minor difficulties of biliary drainage by means of the T-tube is in the management of the bottle used to collect the bile. A long tube to a container outside the bed hampers the patient's movement, and an open bottle attached to the abdominal binder may easily be spilled, or if used by an



ambulatory patient can only be handled with considerable inconvenience. A stoppered bottle cannot be employed, as the drainage must not be opposed by pressure greater than that of the atmosphere. For the past five years I have overcome these difficulties with the simple apparatus illustrated herewith. An ordinary flat dispensing bottle of three- or four-ounce capacity is provided with a sling made of adhesive plaster folded on itself for about three inches at the top and applied along one side, the bottom, and part of the other side of the bottle. This may be pinned to the binder in the case of a patient in bed, or attached to a bandage about the neck if he be up and about. To prevent side-sway the binder is turned up to as to form a pocket in which the lower end of the bottle rests. A nursery feeding nipple is stretched over the neck of the bottle, and the external arm of the T-tube is brought through it by way of a small lateral slit which forms a watertight junction. The tiny hole at the apex of the nipple permits equalization of pressure, and should the bottle be accidentally inverted allows only a drop or two of bile to escape. Soiling of clothing or bedding is prevented, and the patient is free to assume any comfortable posture in bed, or while sitting or walking. Emptying and cleaning the bottle does not disturb the dressings or incommode the patient.

AN ESTIMATE OF THE INCIDENCE OF DEFECTIVE HEARING IN ENGLAND AND WALES

WITH SPECIAL REFERENCE TO A DEAF PERSONS ACT

BY

ARTHUR G. WELLS, B.S., M.B., D.P.H., F.R.C.S.

It is, I think, commonly agreed among those interested in the problems of the so-called "deaf" that so far insufficient attention has been paid to this unfortunate class of sufferers by the State, and that justice will not have been done until at least equal consideration and provision has been made for them as for their fellow sufferers—the "blind."

Efforts there have been to put forward a Deaf Persons Bill, and a considerable amount of support has been promised by individual Members of Parliament, but it would appear that the Minister is unwilling to do anything in the matter unless the idea has the backing of local authorities. While, however, local authorities accepted one clause in the Bill—namely, the lowering of the school age for the deaf—they could not see their way to support the Bill as a whole.

As I understand it, their main reason was the unknown magnitude of the problem. They had no idea of the numbers involved and consequently of the nature of the cost, and without this knowledge, which has never been forthcoming, they refused their support. In order to give some idea of the size of the problem I have endeavoured to make an estimate, from the results of my own experience and the available data to hand, of the probable numbers who would come within the scope of a Deaf Persons Act, and, secondly, of the approximate number of people with defective hearing in England and Wales. While it would be quite impossible to make any accurate statement or estimate of the numbers in each of these groups one might reasonably estimate a maximum within which they would fall, and this I attempt to do in this paper.

Grades of Defect in School Children

For the purposes of my examinations of school children with defective hearing I divide them into Grades I, II, and III, and Grade II is subdivided into Grade IIa and IIb.

Grade I.—This grade covers children who can hear and understand the conversational voice at twenty feet or over in ordinary class-room conditions. Their hearing loss by the gramophone audiometer test is up to about 15 decibels, and with the pure-tone audiometer 35 decibels. They can benefit by education in an ordinary elementary school. This grade includes also some children with greater hearing loss but whose speech and language development is good and who lip-read well.

Grade II.—These children hear and understand the ordinary conversational voice at between 20 ft. and 2 ft. Their hearing loss with the gramophone audiometer test is between 15 and 40 decibels, and with the pure-tone audiometer between 35 and 60 decibels. By reason of their defect they cannot be properly educated without special arrangements or educational facilities. This group is subdivided into Grade IIa and IIb. Those children coming under Grade IIa can be educated in the ordinary school if special facilities are provided, such as a favourable position in the class, etc. Those in Grade IIb require special school education, but not that necessary with the severely deaf. In this grade also come those children whose hearing defect is worse than that described above but whose speech and language are not seriously affected.

Grade III.—Children in this grade can hear and understand the conversational voice at not more than 2 feet if at all, though they may be able to hear vowels with or without discrimination at greater distances than 2 feet. Their hearing loss by gramophone audiometer test is 40 decibels, and it is over 60 decibels with the pure-tone audiometer. Their speech and language are seriously defective, and they require methods of teaching applicable to deaf children who have not acquired speech and language naturally. This grade does not include any children whose speech and language development is not seriously defective.

It is clear that the persons who would fall within the scope of a Deaf Persons Act would be those who would come under the hearing qualifications of Grade IIb and Grade III.

Regular testing of hearing in the ordinary schools by gramophone audiometer has been established in London for some years, and many thousands of children have been tested. As a result of these tests a certain number have been discovered whose hearing is defective enough to call for education in a "hard of hearing" class, and others who require special facilities in class in the ordinary schools—these being in addition to those found by the routine methods of inspection.

Incidence of Defective Hearing

It has for some time past been generally accepted that the number of "deaf and dumb" in England and Wales is round about 40,000, or 1 in every 1,000.

In the year 1935 the total population of England and Wales was 40,645,000. Of this number 2,834,000 were children of the pre-school period; 5,468,960 were children of the school period; 32,342,040 were people of the post-school period, of whom there are about 3,300,000 of the age of 65 and over.

Roughly the ratio between them is pre-school: school: post-school as 1:2:11; or, in other words, the pre-school individual constitutes one-fourteenth of the total population, the school individual two-fourteenths, and the post-school eleven-fourteenths.

Let us consider, first, the so-called deaf. In 1935 there were 446 deaf children in the London County Council schools, but of these ninety-four were out-county children. There were in addition forty-five London children in out-county residential schools. Making allowance for these we get a net result of 397 London deaf children.

These 397 deaf children were part of a school population of 534,500; and if these figures are applied to the whole population we arrive at 32,060 as representing the total number of deaf in England and Wales. Further, if these 32,060 are divided up according to the ratio 1:2:11, it is found that 2,290 are of pre-school period, 4,580 of school period, and 25,190 of post-school period. In arriving at these figures it is assumed not only that those of London apply to the rest of the country but that the incidence in school children is the same as that in pre-school and post-school groups. Is this assumption justifiable?

As far as the first assumption is concerned the Board of Education, from the returns made in 1935, gives 3,291 as the number of deaf children in the country or 0.67 per 1,000 of the school population in average attendance. This figure applied to the whole population would give the total number of deaf as 24,451. I am not at all sure, however, that the returns made to the Board are as reliable as they might be. Further, the work in London is done very carefully and thoroughly, and the figures are sufficiently large—namely, one-tenth of the country—to form a reliable basis for this assumption.

Then as regards the second assumption—namely, that the incidence in the pre-school, school, and post-school groups is the same—I think it is legitimate to accept this, for there is nothing in the post-school period of such consequence as to increase the incidence above that of the school period; and as between the pre-school and school periods the only factor which has to be considered is a post-natal cause of deafness. The only causes worth mentioning in this class of deaf person are meningitis and congenital syphilis. As regards meningitis by far the greatest number of cases are found in pre-school children, and therefore the incidence is hardly altered; while with congenital syphilis most of these cases occur in the first year or two of life, and only rarely are the manifestations delayed until the school period. There are some adults who become extremely deaf, but these I would prefer to classify with the so-called "deafened." On these assumptions we may reasonably accept this figure as being not very far from correct, and therefore no adjustments need be made in these ratios.

As to the cases of acquired deafness—those frequently spoken of as the deafened—the matter becomes rather more complicated, for reasons which I will go into later. There were 210 so-called "partially deaf"—that is, Grade IIb children—in the special schools in 1935. Of this number there were eight out-county children attending the London schools, and one London child in an out-county residential school. Making allowance for these we get a net result of 203 London school children, and, as before, these were found in a school population of 534,500. If these figures are applied to the whole population a rough figure is obtained of 15,436 persons of the Grade IIb type of hearing defect.

In addition to these, however, approximately 30,000 children were tested by means of the gramophone audiometer, and among these were found four children of the Grade IIb type, four of the Grade IIa type, and 34 of the Grade I type. If these figures are applied to the whole population they would represent roughly 5,800 Grade IIb, in addition to the above 15,436 already accounted for; 5,800 Grade IIa type; and 50,000 Grade I type. This would mean that altogether there would be about 21,000 of the Grade IIb type in the country.

As before, it is assumed that the London figures can be applied to the whole of England and Wales. But it cannot be assumed in this case, as was done in the case of the "deaf," that the incidence is the same in the pre-school, school, and post-school periods. Factors arise which make the incidence of hearing defect in post-school life higher than in school life.

Factors Influencing Deafness

There are several factors which influence the incidence of hearing defect in the different groups; chief among these are the hearing defects arising from chronic middle-ear catarrh and otosclerosis; the defect of hearing arising in the course of certain occupations, such as those of cotton-weaving, riveters, boiler-makers, etc.; and senile hearing defect. It will be noticed that though chronic middle-ear catarrh is found among children, it is more common and more pronounced in adult life, while the other factors arise in adult life only. These combine to make the incidence in the post-school group higher than in the school and pre-school. The great difficulty is to get enough evidence to know what the increase is.

Taking the noisy trades, it is well known that the incidence of defective hearing among the cotton-weavers of Lancashire is very high, and it also is with the wool-weavers. Riveters and those in the boiler-making trade have long been known to develop hearing defect as the result of the continuous loud noise associated with their work. Some time ago Dr. G. P. Crowden examined a number of these workers audiometrically at Devonport, and he found an incidence of 33 per cent. defective hearing among the riveters and boiler-makers, but among other workers not engaged in the noisy branches the incidence was about the same as that in the case of school children. I propose, therefore, to suggest 33 per cent. as the figure of incidence of defective hearing among the noisy trades generally, and I think one-third would be a liberal estimate of those who are affected severely enough to come within the scope of a Deaf Persons Act. The number of workers in noisy trades is 315,300. So on this basis those with defective hearing would total 105,100; and those severely affected roughly 35,000.

Deafness in Later Life

With regard to the deafness of later life—that is, 65 years and over—I have made audiometric tests in some of the public institutions. There are 180,295 persons in the public assistance institutions, and of these 61,549 are over 65 years of age. About 76 per cent. of these persons failed to pass the tests, and roughly 20 per cent. came within the type of Grade IIb. This figure applied to the whole population of persons over 65 years—that is, roughly 3,000,000—gives us 2,288,135 as defective in hearing and 593,220 of the Grade IIb type. These inmates of public assistance institutions, as is well known, are mainly below average in intelligence, etc., and so the figure is probably rather on the high side.

With regard to the people of the post-school group up to 65 years of age I have made tests of some hundreds of individuals in Government offices, public assistance institutions, etc. This combination contained both the best type of individual, the poorest, and the intermediate, so all sorts are included.

The result of my tests showed that about 12 per cent. failed; but I was rather surprised to find that there was not a single case of the Grade IIb type among them. Many were severely deaf in one ear, but not in both. No doubt some cases would be met with if considerably larger numbers were tested, but if we triple the incidence of the Grade IIb as found by the audiometric test in the school period (that is, an extra 8 per 23,038 for this group) an adequate allowance will have been made for chronic middle-ear catarrh, etc., especially in view of the liberal allowance made for the noisy trades and the figures given for the over 65 years group. If then the available data are collected and the necessary adjustments made the following figures are obtained.

Table giving numbers of those with Defective Hearing

1.	Grade III type		32,060
2.	Grade IIb type (based on those not audiometrically tested)		15,436
3.	Noisy trades (33 per cent. of 315,300)		105,100
4.	Deafness among those 65 years and over		2,288,135
5.	8 per cent. failures audiometrically tested applied to pre-school children (3,000,000)		240,000
6.	8 per cent. failures school children (5,500,000)	440,000	
	Less 20 per cent. passed after treatment	88,000	352,000
7.	12 per cent. failures post-school period up to 65 years (29,000,000)	3,480,000	
	Adjustment for noisy trades already accounted for —Deduct 12 per cent. of 315,300	37,836	3,442,164
	Total		6,474,895

The number thus amounts roughly to 6½ millions, or about 16 per cent. of the population or 1 in 6 persons.

Though these people are from a medical point of view defective in hearing, quite a large proportion of them have only a comparatively slight defect, and, further, many have a defect in one ear only. For example, in the case of the school children roughly two-thirds are defective in one ear and one-third in both ears; so quite a large proportion of this huge number have little or no handicap. Further, if all cases that would benefit from treatment were treated efficiently the number would not be so high.

To make an estimate of the number of persons who would be covered by a Deaf Persons Act, a list must first be made of all those of Grade III and Grade IIb types.

1.	Grade III type		32,060
2.	Grade II*b* type based on those not audiometrically tested in school		15,436
3.	Grade II*b* type found by audiometric testing on the basis of 4 per 28,038, applied to the population, which includes the pre-school, school and post-school groups up to the age of 65 years—that is, on a population of 37,000,000		5,349
3*a*.	Allowance for cases of chronic middle-ear catarrh and otosclerosis, etc., for people of the post-school group up to 65 years at the rate of 8 per 28,038 = roughly		8,000
4.	Noisy trades Grade II*b* on the basis suggested	35,000	
	An adjustment must be made here, since these come into headings Nos. 2 and 3; and we must take Nos. 2 and 3 as applied to the post-school population up to 65 years, in which these workers fall; that is, 1 per cent. of 15,151 (203 in 534,500 gives 11,014 in 29 millions; 4 in 28,038 gives 4,137 in 29 millions; that is, 15,151 altogether. 315,100 in about 1 per cent. of 29 millions. ∴ 1 per cent. of 15,151 = 151)	151	
			34,849
5.	Grade II*b* deafness occurring in persons over 65 years, which includes senile deafness, advanced middle-ear catarrh, otosclerosis, etc. If results of the tests be applied to the 3,000,000 population the figure would be 593,220.		
	But many of these receive State assistance at the age of 65 years. There are, however, 575,391 who do not receive aid from the State until 70 years of age, and if we apply the results of our tests to these we get a total of 113,773 who would fall within the scope of a Deaf Persons Act between the age of 65 and 70 years		113,773
	Giving a total of		209,467
	From this number have to be deducted:		
(*a*)	The Grade II*b* audiometrically tested pre-school and school population—namely, 8,500,000 at the rate of 4 per 28,000	1,214	
(*b*)	The Grade II*b* not audiometrically tested pre-school and school population—namely, 8,500,000 at the rate of 203 per 534,500	3,210	
(*c*)	The Grade III pre-school and school population—namely, 8,500,000 at the rate of 534,500 who would not come under the Act	6,313	
			10,737
	Giving a net result of		198,730

Conclusions

To sum up: if the figures for London are accepted as applicable to the whole population, and the results of the tests of our "samples" of the different groups are applied to the remainder of the population, we arrive at an estimate of about 6½ million people who have defective hearing in one or both ears—that is to say, 16 per cent. of the total population of England and Wales, or one in every six persons.

Also the number that would come within the scope of the benefits of a Deaf Persons Act would be about 198,000. This, however, is a maximum figure, because a very definite proportion would not need to receive benefits under the Act; for example, all those deafened through noisy occupations, so long as they retained their jobs—and they would not lose them on account of their hearing defect. Again, a certain number of those deafened, being in a more affluent position, would not require assistance.

For these reasons the true figure would be more likely to fall in the neighbourhood of 150,000.

This is not exact, of course, but nor would any other method of investigation be. If it were possible to take a census we should not be any better off. The ordinary census is quite a different thing. First, it is compulsory; secondly, the questions to be answered—for example, the number of males and females in the house, etc.—are comparatively easy to answer, but in the case of a census dealing with defective hearing the results would not be worth the paper they were written on. In the first place, it would be voluntary, and many people would not make a return; and, in the second, many would return themselves as normally hearing when they were not. It is a common experience to examine an individual with over 50 per cent. of his hearing gone before he realizes he has a hearing defect at all. Then how would those who regard themselves as defective make their return, and under what heading?

At the present time there is a special committee sitting on the problems of defective hearing, and I have the honour to be on that committee. We have taken the evidence of many witnesses, and I think I should be correct in stating that no two of those witnesses meant just the same thing by the terms "deaf," "partially deaf," "hard of hearing," etc. These are vague and elastic terms, meaning one thing to one person and another thing to another. Their use should be very restricted. This is why I have adopted the terminology of the grades in my examination and classification of school children, each grade being defined exactly.

This method is concise and scientific, and if used by all would make for clear understanding.

If witnesses whose life-work is among the deaf adopt different standards in their minds for these terms it cannot be expected that the "man in the street" would show anything approaching unanimity in his answers. The only possible way to approach accuracy would be to examine the 40 million people in this country, and even then, unless they were examined by one examiner—which of course would be quite out of the question—the personal factor cropping up in the different examiners would make for variations. So even this would not give us an accurate return.

Nevertheless if it is possible to give—as I have attempted to give here—an estimate of the probable number around which the true figure, if known, would fall, a step will have been taken to solve a difficult problem and towards obtaining a Deaf Persons Act.

Summary

1. A rough estimate has been made (*a*) of the total number of persons with defective hearing in England and Wales, (*b*) of the number of persons who would come within the scope of a Deaf Persons Act, on the lines of the Blind Persons Act.

2. No method of investigation of any kind would furnish an accurate figure.

3. The method employed in this investigation was that of applying the incidence found in "samples" of various sections of the population to the whole population of these sections.

4. Many adjustments were required, especially in estimating the number under (*b*), and while some of the most important ones have been made in the investigation others have had to be disregarded owing to the lack of data—for example, the incidence of severe deafness in persons in State mental institutions.

5. The estimate shows that about one in every six persons in England and Wales is defective in hearing in one or both ears.

6. The number of persons who would be covered by a Deaf Persons Act and partake of its privileges would probably be in the neighbourhood of 150,000.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY JULY 3 1937

SOCIAL BACKGROUND OF ILL-HEALTH

The transition from alleviative charity to constructive public service and an active participation in preventive medicine has been manifested in our hospital system by the growth of social service departments. Disease, which used to be regarded as an entity, is now looked upon as an event in a chain of circumstances and restoration to health as a pilgrimage in the reverse direction. Medicine and surgery can be very helpless unless some organization is available to deal with the "social" components in this chain. Defining "social" as that which concerns human associations and the stresses and strains of those associations, Thornton and Knauth[1] have recently presented us with a very clear picture of what this process means in the lives and clinical histories of one hundred consecutive admissions to the Presbyterian Hospital in New York. They show that hospital social service is not merely confined to making prescribed treatment economically possible for the patient, but that in a far wider sense social investigation is implicit in treatment and often invaluable in diagnosis.

The social problems that face the United States and Great Britain are in some respects very different. The absence of national health insurance and the difficulties of full racial assimilation complicate the American picture. The similarities are, however, highly significant and demand close attention in any society which is becoming more and more mechanized and urbanized. A rural community may lack the equipment and specialization possessed by urban dwellers not only for treatment when ill but for the ordinary processes of living. On the other hand, as Thornton and Knauth point out, the town dweller is more migrant and his contacts are more impersonal, so that when he begins to ail he often lacks the individual care and attention of friends or relatives. This was notably so in a majority of the cases in the series, and was a major factor in many in allowing a really serious situation to develop. The population of the United States, tending to be more migrant than ours, showed this to a greater extent than would be evident here, but it is not a factor to be overlooked when considering the redistribution of population. Arising out of this there is a corollary. People need a family doctor in the background. He it is who can see things in their totality and observe the effects of economic, domestic, and other influences before trouble goes too far. Highly organized and specialized hospital and clinic services are necessary, and we need the new industrial clinics that are arising, but the general practitioner is, and must always remain, the backbone of medicine. He must be able to use the hospital and other social service facilities when he requires them, but, conversely, without his aid these services would largely fail to achieve that personal contact between medicine and the patient which is essential not only for effective therapy but for education and prophylaxis.

Apart from this lack of personal service, which affected 65 per cent. of the cases under review, the next most potent social components in illness were faulty personal habits, undue struggles for existence, and dissatisfaction with work. Faulty personal habits can only be corrected by a process of education applied either *ad hoc* to specific cases or as a preventive measure in schools. It is not enough merely to teach hygiene. In secondary schools and universities we need to aim at the inculcation of some sort of biological awareness. That those who administer our complex society can achieve positions of great power and influence without even a nodding acquaintance with the nature of vital processes is a grave error, for it hampers the necessary correlation of historical and economic events with physiological and emotional needs. Such an ordered background would in time affect the general level of thought and would powerfully influence public and private action. In this way the needs of society would be met not only by the provision of material comfort but by the development of satisfactions which would remove some of the main causes of emotional unrest. Dissatisfaction with work is not just being discontented. It means the lack of emotionally satisfying yields from the output of energy. We have to consider this carefully in relation to modern employment, and it is perhaps here as much as in anything that industrial medicine has its new advances to make.

Medicine cannot bring about direct alterations in the economic fabric nor in the work men and women do, but it can influence changes in the methods of doing that work, in the systems of control, and in the various schemes of incentives. To do this it must press for a wider recognition of the clinical effects of good and bad labour management, and it must emphasize the need for a sound biological outlook in social and industrial administration. Whether preventive or curative the social component in medical care is primarily

[1] *The Social Component in Medical Care.* By Janet Thornton, in collaboration with Marjorie Strauss Knauth. London: H. Milford, Oxford University Press. (15s.)

educational. We have a great task to correlate the physical and mental welfare of mankind with social states, and this must be done without making people soft and introspective. A world full of machinery needs a high degree of reason to keep it safe and sane, but the force of emotion remains as strong as ever, full of potentialities for creation or destruction, for increasing health or producing and aggravating illness.

Miss Thornton and Dr. Knauth have not described anything new. They do not claim to have done so, but they depict most forcibly a mass of humanity, much of it not uneducated in the accepted sense, struggling with appalling ignorance of biological and social forces against a stream of competitive economic individualism which either wears them down so that they become ill, physically and mentally, in a vicious circle, or which, once they are ill, draws them into the vortex. In spite of our makeshift ways, or perhaps because of them, we have in this country escaped so far from much of the worst effects of high-pressure living, but the future is uncertain, and we must see to it that in attacking social ills and in evolving new systems we neither leave men and women at the mercy of forces too great for them to stem nor at the same time destroy that personal responsibility and independence which is essential for health and happiness. It is a problem which must not intimidate us, or assuredly it will destroy our society.

MESODERMAL SYNDROMES

Like most syndromes the triad of hereditary brittleness of bones, blue sclerotics, and otosclerosis came to be recognized in a piecemeal manner. As early as 1788 Eckman established the hereditary nature of one form of fragility of bone in reporting the occurrence of fractures in three generations. When recording other cases of that nature Spurway, in the *British Medical Journal* in 1896, remarked on the blueness of sclerotics in some of his own cases. That this was no accidental association was clearly proved by Eddowes in 1900, also in these columns. The further association of deafness occurring in such patients in the third and fourth decades of life was established in 1917 independently by Bronson, and by van de Hoeve and de Kleijn. The careful study by Julia Bell in 1928 in *The Treasury of Human Inheritance* clearly demonstrated the dominant nature of this affection. As with all syndromes, it is the exception rather than the rule to find all the components in one and the same patient, and in the diagnosis of an individual case the family history is frequently of paramount importance. That the disturbance is indeed widespread is brought out by the fact that many of the patients are undersized, quite apart from any stunting of stature due to multiple fractures. Skull deformities were noted by Apert, Bach, and Odinet in 1928, while phlebosclerosis has been reported by Joachim and Wasch. Radiography shows the bone to have a decreased density and the cortex to be thin; excessive calcification is, however, occasionally present in the petrous bone. While fractures may occur throughout life they are less frequent after puberty. Healing is invariably good.

It is still undecided whether the bluish appearance of the sclera is due to thinness of the tissue or to an increased translucency from diminished calcium content. Both these views are being supported by both positive and negative evidence.[1] In a general way it may be said that the syndrome is mesodermal in origin, and is thus linked up with the various other mesodermal syndromes, such as arachnodactyly and the more recently described status dysraphicus. Status dysraphicus is not by any means a clearly established entity. It is based on the old conception of Henneberg that faulty closure of the neural tube is the cause of syringomyelia. This conception was worked out in detail by Bremer,[2] who searched in patients with syringomyelia and in their families for developmental anomalies which would seem to result from a spinal dysraphy. He found a considerable number: preponderance of the extended arms over the body length, funnel chest, acrocyanosis, moist, cold hands, kyphoscoliosis, winged scapulae, webbed fingers, inequality of the mammae, spina bifida, anomalies of the ears, highly arched palate, and other signs usually labelled stigmata of degeneration. The work of Bremer widened the conception of syringomyelia, making it part of a well-defined syndrome, hereditary in character, and showing a range from the normal to the definitely pronounced case of syringomyelia. Believing the anomalies to be due to malformation of the spinal raphe, he suggested the name of status dysraphicus. Ocular aspects of this syndrome were elaborated by Passow[3] in papers published during the last few years. He stressed the frequent occurrence of the Horner syndrome and heterochromia iridis, and advanced experimental evidence to show that the faulty embryology in status dysraphicus involved the motor fibres and cervical sympathetic and thus led to the Horner syndrome. The many points that arachnodactyly has in common with status dysraphicus found an

[1] Hills, R. H., and McLanahan, S. (1937). *Arch. intern. Med.*, **59**, 41.
[2] *Dtsch. Z. Nervenheilk.*, 1926, **95**, 1.
[3] *Klin. Mbl. Augenheilk.*, 1935, **94**, 102; *Münch. med. Wschr.*, 1934, **81**, 1243; *Arch. Augenheilk.*, 1933, **108**, 37.

apparent contradiction in the dissimilarity of the ocular complications. Since pupil changes are not infrequent in arachnodactyly, there are points of contact between the two syndromes as well as the dissimilarities, and Passow has tried to explain the ocular complications of both syndromes by a common embryological fault. From a review of the literature on arachnodactyly Pino, Cooper, and van Wien[1] argue that evidence of status dysraphicus is indeed to be found in some of the reported cases of arachnodactyly, and in one case the Horner syndrome seems to have been present.

So little, however, has as yet been reported on status dysraphicus that it is difficult to reach final conclusions. What is interesting is not only the slow recognition of new syndromes but the suggestion that these syndromes have common underlying factors. For the present the building-stones rather than the ultimate edifice are being dimly realized.

THE SPHINCTER OF ODDI

Some people are still sceptical about the existence of the sphincter of Oddi, and E. A. Boyden[2] now suggests that there are two reasons for this. First, it is difficult to separate the action of the sphincter from that of the duodenal muscle which surrounds it, and, secondly, because of the small size, position, and complexity of the sphincter it has been equally hard to demonstrate its independence histologically. Boyden has therefore made a comparative study of the sphincter, and finds that the termination of the common bile duct varies a good deal both in man and in animals. There is no ampulla in the dog, and even in its embryo the bile and pancreatic ducts have separate openings into the duodenum. In some animals the musculus proprius of the common duct is easily separable from that of the duodenum, and in others there is an intimate blending of bile duct and intestinal musculature. The musculus proprius is well seen in the opossum, in which the ampulla of Vater and its duct are clothed with a thick double layer of smooth muscle consisting of circular and longitudinal coats. In man the muscle of the ampulla is a relatively weak layer consisting of longitudinal fibres overlying an inner circular layer, but proximal to this there is a zone of more powerful circular fibres surrounding the bile duct. These may be designated the sphincter choledochus, and there is evidence that these fibres can hold up the column of bile in the duct so that pancreatic juice alone may under certain conditions enter the duodenum. Magnesium sulphate introduced into the duodenum relaxes the sphincter choledochus and allows an admixture of bile with pancreatic juice. Boyden's studies show conclusively that in the opossum, guinea-pig, dog, and man the pars intestinalis of the bile channel and its associated duct of Wirsung (if this be present) are ensheathed in a two-layer musculus proprius which may legitimately be designated the sphincter of Oddi. In the *Journal* of December 12 last year (p. 1203) we drew attention to some valuable clinical research at the Mayo Clinic by Butsch, McGowan, and Waltman Walters on the action of certain drugs on the emptying mechanism of the common duct. One of the most important results of this research was to show that morphine, even in small doses, caused an increase of intrabiliary pressure, and it was concluded that this drug should be avoided after operations on the biliary duct. Some further experimental work on the resistance of the sphincter in man has been reported lately from New York.[3] Observations on the resistance of the sphincter were made with apparatus rather like that used by the workers at the Mayo Clinic. The patients in whose common ducts T-tubes had been placed had all had operations on the biliary tract, so that only pathological conditions were available for study; we must therefore be chary of applying conclusions drawn from them to normal conditions. From their investigations, however, and particularly from those made on cases in which infection was minimal and conditions approached the normal, the authors conclude that the resistance of the sphincter of Oddi is normally somewhere about 150 mm. of water. Doubilet and Colp find also that their experimental work supports the contention that magnesium sulphate is much more effective than ordinary or even fatty meals in causing relaxation of the sphincter. They also confirm what Oddi first observed—that spasm of the sphincter is produced by the local application of hydrochloric acid. Their experiments support the conclusion of the workers in the Mayo Clinic that morphine causes severe spasm of the sphincter. In certain cases this spasm lasted over three hours and was not abolished by atropine. They state that a satisfactory drug for the treatment of biliary colic is still to be found.

[1] *Ann. intern. Med.*, 1937. **10**, 1130.
[2] *Surgery*, January, 1937, p. 25.

ANTI-PLAGUE VACCINE—LIVE OR DEAD?

Plague continues to exact a heavy toll in many different parts of the world. Whenever possible the most satisfactory way to combat it is to direct a fierce attack upon the rat population, for, as the English Plague Commission demonstrated, the continuance of the disease in man depends upon infection of these rodents. By constructing rat-proof houses for the native population long-standing foci of disease may be eliminated. For example, at Malang, in East Java, where plague claimed 22,000 victims between 1911 and 1915, the disease has been completely stamped out by rebuilding 140,000 houses for the natives. Not a single indigenous case, in fact, has occurred since 1916. Such radical treatment, however, is not always possible. Where rats cannot be built out of existence measures must be taken to raise the resistance of those who are likely to be exposed to infection. For this purpose vaccination is now being extensively used. The type of vaccine varies. In India Haffkine's dead vaccine is still favoured; in the Dutch East Indies a living avirulent vaccine is preferred. It is difficult on the available evidence to decide which of these two vaccines is the more valuable. Sokhey and

[3] Doubilet, H., and Colp, R.: *Surg. Gynec. Obstet.*, March, 1937, p. 622.

Maurice[1] at the Haffkine Institute, Bombay, have been devoting themselves in recent years to improvements in the preparation and standardization of the dead vaccine. They find that cultures of the plague bacillus can be kept fully virulent if stored at 4° C., but gradually become avirulent if weekly subcultures are made and kept continuously in the incubator. For the preparation of their vaccine they insist on the use of a fully virulent strain. Killing the organisms by heat at 60°–70° C. for one to two hours, as has been done in the past, partly destroys their antigenic activity. If, on the other hand, they are exposed to a temperature of 55° C. for only fifteen minutes their antigenic activity appears to remain intact. Standardization of the vaccine is carried out on white mice. These animals are very susceptible to experimental inoculation, and almost always die after a subcutaneous injection of about fifty living bacilli. The protective action of any given vaccine can therefore be assessed on a more or less quantitative basis. Comparison between a heat-killed vaccine made from a virulent strain and a living vaccine made from an avirulent strain seemed to show that the former was considerably more effective than the latter in protecting mice against infection. From the Dutch East Indies, on the other hand, come very promising reports of the use of an avirulent living vaccine. In a communication made to the International Office of Public Hygiene Vogel[2] summarizes the results obtained by Dr. Otten, who is director of the Pasteur Institute at Bandoeng. In the two districts of Bandjaran and Batoedjadjar 37,435 subjects were vaccinated and 39,483 were left as controls. In the first group the death rate from bubonic plague was 1.01 per 1,000, in the second group 5.05 per 1,000. These results, favourable to vaccination as they were, might have been even more so if the less susceptible infants and young children had not mainly been included in the control group. It may be noted that the incidence of pneumonic plague was not greatly dissimilar in the two groups, there being a total of thirty-six cases in the vaccinated and forty-eight in the control group. The virulence of this infection, however, is such that nothing but a high degree of immunity can be expected to protect against it. On the whole the results obtained appear to have been very satisfactory. Most suggestive is the favourable impression among the natives themselves ; as many as 90 per cent. are now coming forward for vaccination. It will be interesting to hear the results of a similar field trial made with the newly standardized Haffkine's vaccine.

IDENTIFICATION BY THE RETINAL PATTERN

Any method of identification has great legal value. The principal methods at present in use are, of course, the classification of finger-prints and of dentitions, but Dr. Carleton Simon, criminologist of the International Association of Chiefs of Police, has developed a method of identification by means of the blood-vessel patterns in the retina. Dr. Leo Haber[3] suggested in 1921 that retinal photographs might be used for identification, as the vascular pattern was unchangeable through life and the only difficulty lay in classification. In 1935 Dr. Simon[4] described, with Dr. I. Goldstein, a method of classification based on a retinal protractor, with the optic nerve as its centre. He uses only the vein pattern, because the arteries, having a lighter colour, are not definite enough. The zero axis is a line drawn from the centre of the papilla to a point 10 mm. distant on the superior temporal vein, and the notation describes the angles at which veins or branches intersect two circles, one of 10 mm. and the other of 5 mm. radius. His system, which has been gradually simplified in use, needs a minimum of figures and can, he says, be mastered in a couple of hours. His claim that it is a valuable adjunct to finger-print identification in certain cases appears to be sound, but its practical value, as Dr. Simon himself points out in a more recent article,[5] must be proved by time.

AN INSURED PROFESSION

Another year of progress—the thirtieth in its history—has been recorded by the Medical Insurance Agency. The figures presented to its recent annual meeting showed a new record in every particular. The gross income of the Agency is up by some £900 on the year before, the rebates to members are up by some £400, and the grants to medical charities by over £500. The premium income on policies effected in 1936 was £280,000, and the life assurances completed represented £486,000, in each case a fourfold increase on what they were ten or twelve years ago. But the full story of an excellent piece of work for the profession is not told by these or any figures. The Agency has established itself as a disinterested body, not out for profit-making but able to offer to the profession impartial and expert advice on all matters of insurance. Insurance is nowadays a matter for experts, and there are special circumstances connected with medical practice which make expert advice on this subject more than ordinarily desirable. The Agency has set itself with great success to give advice to medical men and women on their insurance contracts, and by a system of rebates on practically all classes of policies to effect a direct saving for members of the profession on the amount paid in premiums. It is not in itself an insurance company, and very much of the business that it carries through is reflected in the profits of other concerns, but it has the satisfaction of performing a real service. At the annual meeting it was stated that owing directly to the action of the Agency there is now, in the shape of policies held by members of the profession in life, endowment, and other forms of insurance, a capital value of four and a half million pounds sterling. This represents not only an individual security for the holders of the policies and their families but also in a sense a collective security for the profession, because the effect will be eventually to reduce the number of claims upon medical charities. Many of the cases which are now helped by the Royal Medical Benevolent Fund or Epsom College would never have arisen if the claimant had effected suitable

[1] *Bull. Off. int. Hyg. publ.*, 1937, **29**, 505.
[2] Ibid., p. 514.
[3] *Arch f. Kriminol.*, **74**, 139.
[4] *N. Y. St. J. Med.*, 1935, **35**, 901.
[5] Ibid., 1937, **37**, 577.

insurances. While on the one hand the Agency is thus diminishing the need for medical charity at some future period—though the existing need requires no emphasis—it is also making grants to such charities, apparently as a reparation for not having been in existence at an earlier period. During the thirty years of its existence medical charities have benefited from its operations to the extent of £42,700. At the recent meeting, from the surplus income available, a distribution was made of £2,830 to the Royal Medical Benevolent Fund, £730 to Epsom College, and £400 to the Sir Charles Hastings Fund. Some particulars were also given of the volume of business transacted during 1936. In life and similar assurance 428 proposals, representing a capital sum of over half a million, were received and 367 of them completed. Additional motor-car insurances to the number of 332 were effected. Increases were reported in accident and sickness insurance and employer's liability and household insurance. On the basis of these figures the medical profession, commonly supposed to be unbusinesslike, is growing visibly in prudence. It is noted that the tendency is always in the direction away from special forms of insurance and towards comprehensive policies, and that no doubt is to the good. Schemes for pension benefit and for loans for purchase of house or practice continue to be popular. The committee of management, of which Sir Humphry Rolleston is chairman, with fourteen other medical members, is to be congratulated on the continuing progress of the Agency in all its undertakings.

THE HOSPITAL OF TO-MORROW

Many of the older hospitals can hardly be said to have any architecture. They are amorphous growths, and their piecemeal extension has prevented the efficient planning of wards and departments and services. An enlightened architectural intelligence, however, is now at work in hospital construction, and although no one can predict what future developments may render even the most modern constructions out of date, some of the most recent work is not only a delight to the eye but furnishes an example of perfect adaptation to modern ideas in institutional treatment of the sick. Some of these are illustrated in a special hospital issue of the *Architects' Journal* (June 24, 1s.). The views include the Birmingham Hospital Centre, which when completed will accommodate over 800 patients, with a modern teaching hospital and medical school; the Harefield sanatorium for the Middlesex County Council, with wards that give the greatest possible exposure to sunlight, while privacy is obtained by means of small ward units; Scarborough general hospital; the infectious diseases hospital at Paisley, and the Welwyn Cottage Hospital; also a number of outstanding works in London, the nurses' house of the Hospital for Sick Children, which received an award of the Royal Institute of British Architects for exceptional merit; the extensions of St. Bartholomew's; the new Westminster Hospital rising at Millbank; and that very dignified and beautiful structure, the Royal Masonic Hospital at Hammersmith. Something is also shown of continental developments; for example, the remarkable arrangement of stepped sun balconies and clerestory windows of a sanatorium in Poland. The largest problem in hospital construction is vertical versus horizontal planning. The vertical hospital has great advantages to offer in convenience for the staff, but it is also very costly and, unlike the horizontal hospital, not easily altered when it becomes out of date, as it may easily do in twenty years. One of the specialist writers in the *Architects' Journal* suggests that during the next ten years hospital designers will be most concerned with the provision of special hospitals in which planning and equipment will probably show more rapid advances than construction—particularly the equipment and arrangement of free circulation within the special departments. One important point is the elimination of noise. Some hospitals cannot be built beyond earshot of busy main roads. A good deal of noise can be avoided by double windows, but then ventilation becomes a special problem. Moreover, when outside noise is stopped inside noises remain and may seem to be intensified. Rubber floors, doors with effective silencers, the replacement of bells by coloured lights, and the use of acoustic materials go some way to diminishing the problem. Another detail is the operating theatre. The theatre unit itself has reached a high degree of development and has become more or less standardized, but the difficulty remains in a teaching school of any size of providing accommodation for students within the theatre. It is suggested that the eventual solution of this problem lies in the provision of an optical arrangement whereby a view of the operation may be projected on to a screen in an adjoining room.

NATIONAL RADIUM TRUST

The National Radium Trust met on June 28 at the Privy Council Office under the chairmanship of Viscount Halifax, Lord President of the Council. Plans were reviewed for making available a further substantial amount of radium. The Earl of Donoughmore was reappointed for a further period chairman of the Radium Commission, which allocates the Trust's radium and supervises it in use. The Trust welcomes gifts and bequests of all kinds in furtherance of its objects, including trusts subject to special conditions; it is expressly authorized to accept them under the Royal Charter granted in 1929. Of the Trust's funds £150,000 was contributed by public subscription in that year as a thankoffering for recovery of King George V. Mr. R. Stanton has been appointed secretary of the Trust in place of Mr. George North, resigned.

By an Order of the Committee of Privy Council Mr. W. M. Goodenough is appointed a member of the Medical Research Council on the retirement of Lord Mildmay of Flete. Mr. Goodenough also succeeds Lord Mildmay as Treasurer of the Council.

The Scottish Association for the Deaf has published a leaflet entitled "Advice to Parents of Young Children," which draws attention to the importance of the early detection of deafness. The leaflet can be obtained on application to the hon. secretary's office, 3, Midlothian Drive, Waverley Park, Glasgow, S.1.

THE DOCTOR IN POLITICS AND DIPLOMACY

SIR ARTHUR MACNALTY'S LECTURE

The Sir John MacAlister Memorial Lecture was delivered at the London Temperance Hospital on June 24 by Sir Arthur MacNalty, Chief Medical Officer of the Ministry of Health, who surveyed the whole of history, ancient and modern, in describing outstanding examples of "The Doctor in Politics and Diplomacy."

There was hardly a field of high endeavour, said the lecturer, in which men with medical qualifications were not to be discovered. Two men eminent in medical science had contributed also largely to laying the foundations of the science of politics. One of these was Aristotle, tutor and adviser of Alexander the Great, who was an anatomist before he became a politician. The other was Sir William Petty (1623–87), founder of the science of political economy, a graduate of medicine at Oxford, later physician to the Army in Ireland, who relinquished medicine and devoted the rest of his life to political science.

Medical Victims of Politics

When the doctor turned from healing to politics too often he embarked upon an uncharted sea of peril. In mediaeval times the physician's knowledge of drugs was liable to be invoked by unscrupulous politicians to remove their rivals. Catherine de Medici employed an Italian physician named Cosmo Ruggieri, who was supposed to have poisoned her sons at her request; probably this was untrue, but Ruggieri appeared as a sinister character in Harrison Ainsworth's *Crichton* and Balzac's *Sur Catherine de Medici*. The Earl of Leicester had an Italian physician, Julio, who was affirmed to be a skilful compounder of poisons. Another of Leicester's physicians, Walter Bayley, was also said to have a skilled knowledge of poisons which he placed at the disposal of his patron, but this must be doubted in view of Bayley's honourable conduct in the case of Amy Robsart and his life of professional integrity. Less fortunate than Bayley in the web of Elizabethan politics was Roderigo Lopus or Lopez, the Jewish physician of the queen and physician to St. Bartholomew's; he was hanged for high treason. Sir George Wakeman, physician to Catherine of Braganza, who had "the best reputation of any Roman Catholic physician in England," was denounced by Titus Oates in the days of the Popish plot, but his acquittal dealt a blow at the plot and freed the queen from suspicion. One of the most unfortunate of medical plotters was the humane and gentle Archibald Cameron (1707–53), who took medical charge of the forces raised by his brother for the Young Pretender. Although he never bore arms he was attainted for high treason and executed at Tyburn.

Two Doctors of the "Terror"

Sir Arthur MacNalty next mentioned two doctors of the "Terror." One was Dr. Guillotin, doctor of medicine of Rheims University and one of the founders of the Académie de Medécin, whose professional fame, however, was eclipsed by his association with the deadly instrument which bore his name, but of which he was neither the inventor nor the victim. In the Constituent Assembly he proposed decapitation by machine as the most humane method of execution. He had no share in the excesses of the French Revolution, at which his humane spirit must have shuddered. The other was Marat, at one time a practitioner in Soho and an M.D. of St. Andrews. When the tide of revolution rose in Paris Marat abandoned medicine for politics, and the rest of his life was closely interwoven with public events. He remained independent, criticizing in turn every party in power. After his assassination he was accorded a magnificent funeral in the Pantheon, but then came reaction; the patriots rose against his memory and flung his ashes down a sewer in the Rue Montmartre. Had he adhered to his profession he would have gone down into history as a great scientific physician.

The Doctor as Ambassador

The lecturer next discussed the doctor as ambassador. Several rulers of Russia had from time to time the services of English physicians, who acted also as unofficial envoys of the Government. One of these was Thomas Dimsdale, who went to St. Petersburg in 1768 at the request of the Empress Catherine. His successful inoculation of the Empress and her son against smallpox resulted in the granting to him of the rank of baron of the Empire, counsellor of State, and the post of physician to the Empress, with, incidentally, a pension and a handsome present.

The first medical ambassador appeared to have been Sir Thomas Elyot (1490–1546), who was ambassador to the court of the Emperor Charles V. In the seventeenth century an anatomist, John Finch, became Turkish Ambassador. Another highly distinguished medical ambassador was Sir Charles Richard Vaughan (1774–1849), Radclyffe Training Fellow in the University of Oxford, who during the Peninsular War was secretary of the Legation at Madrid and acted for a time as British Minister there. Afterwards he was Minister Plenipotentiary to Switzerland and Envoy Extraordinary and Minister Plenipotentiary to the United States. Medicine had a second ambassador to the United States in Sir Auckland Geddes in 1920.

Medical Powers Behind the Throne

Among the friends of British monarchs were two physicians, upright, selfless, and able. One was Sir William Knighton, private secretary and privy purse to George IV. Knighton was an M.D. of St. Andrews, Aberdeen, Lambeth, and Göttingen, and practised in Hanover Square, chiefly as an accoucheur. He was appointed by the Prince Regent to an important office in the Duchy of Cornwall, and was frequently employed by the Prince when he became King on confidential missions abroad. He attended the King night and day in his last illness. The other was Baron Stockmar, adviser to the young Queen Victoria. Stockmar had been an Army surgeon and personal physician to Leopold of Belgium. The advice he gave to the Queen appeared always to be frank, ripe with experience, and dictated by the highest motives. Palmerston called him the most disinterested man he had ever met. His political knowledge was immense, his influence in high affairs unbounded. Like his medical work his statecraft was based on high principles and made for good.

Medical Prime Ministers

Medical prime ministers had presided over the destinies of Denmark, France, Canada, and South Africa. The Danish prime minister was Struensee (1737–72), who became virtually dictator of Denmark in 1770, but he ended his career on the scaffold. The French prime minister was Clemenceau (1841–1929), whose forbears for 300 years were doctors. Hardly had he begun to practise in Montmartre when politics claimed him. "The Tiger" made and destroyed ministries at his pleasure, but his political integrity was never doubted. The last phase of his career, when he led the last War Government of France, was still in the public memory. Sir Charles Tupper, a doctor, for a time guided the destinies of Canada with wisdom and success; he did much to bring about the federation of the Canadian provinces. The most romantic of medical prime ministers was Leander Starr Jameson, prime minister at Cape Colony from 1904 to 1908. He was born in Edinburgh, and studied medicine at University College Hospital, London,

G. STEWART SMITH: CHRONIC MONOCYTIC LEUKAEMIA

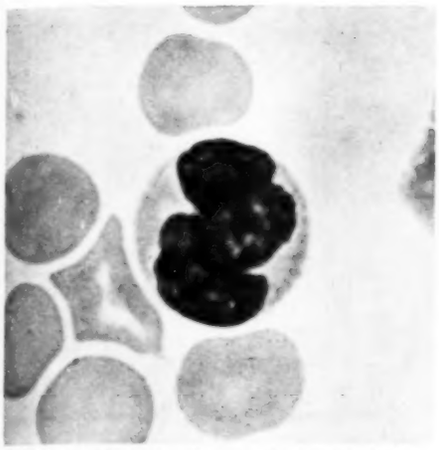
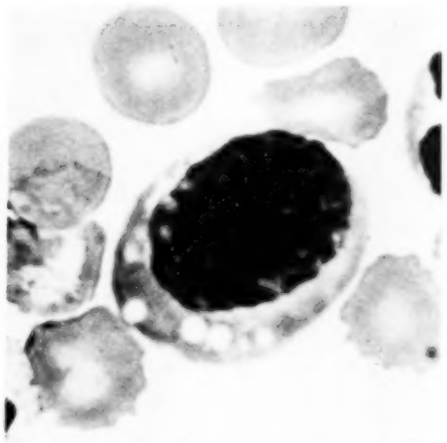
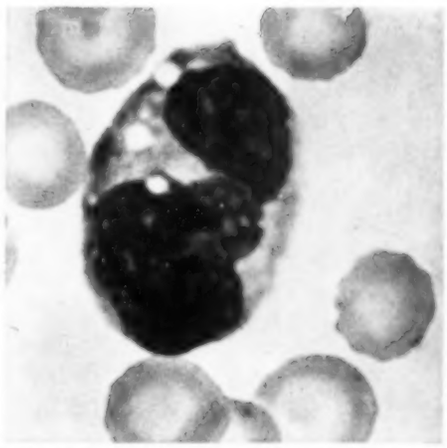
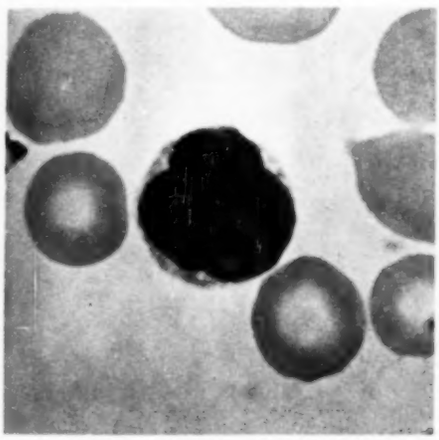


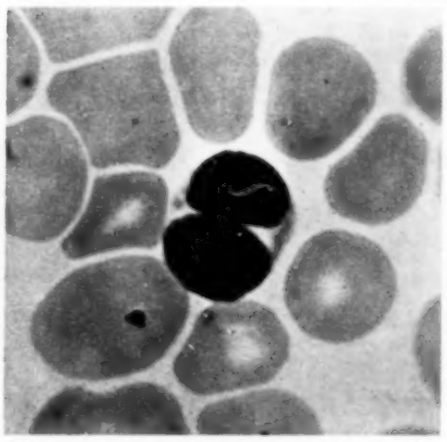
FIG. 1.—Monocyte (Type 1) showing lobulated nucleus.

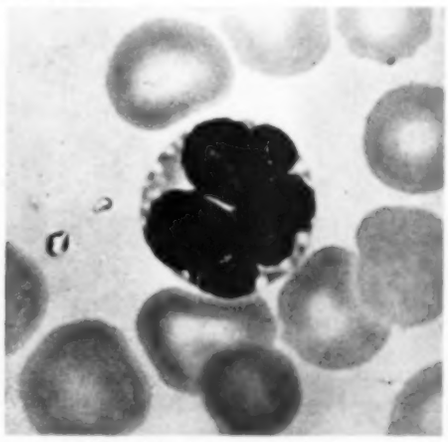




FIGS. 2 and 3.—Monoblasts (Type 2); much larger cells than the monocyte, with faintly marked nucleoli and vacuolated cytoplasm.







FIGS. 4, 5, and 6.—Primitive cells (Type 3). In Fig. 4 the nucleus is single, in Fig. 5 bipartite, and in Fig. 6 tripartite. (Magnification × 2,000.)

A. RALPH THOMPSON: VESICAL EXTROVERSION WITH CONTROL OF MICTURITION

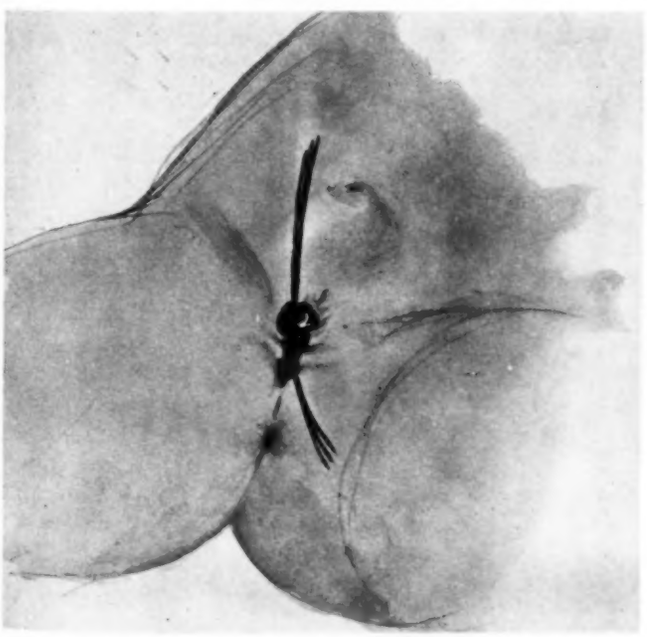


FIG. 1.—Case I. Salmon-gut probes have been passed through the proximal urethra from the bladder.

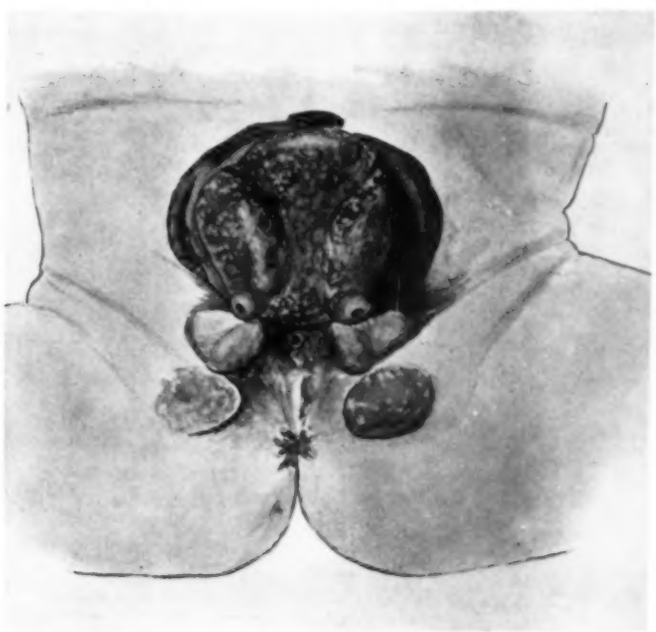


FIG. 2.—Case II. Note the large extroversion of the bladder showing the ureteric orifices, and below this the bilateral projections which represent the penis and the scrotum. The central orifice between the projections suggests a proximal urethra.

V. B. GREEN-ARMYTAGE: TUBO-UTERINE IMPLANTATION FOR STERILITY

FIG. 1.—Showing the uterus before operation.

FIG. 2.—Six months after operation.

LÉON FEINSON MULDAVIN: CRANIOCLEIDODYSOSTOSIS

R. A. DESAI: SCHAMBERG'S DISEASE

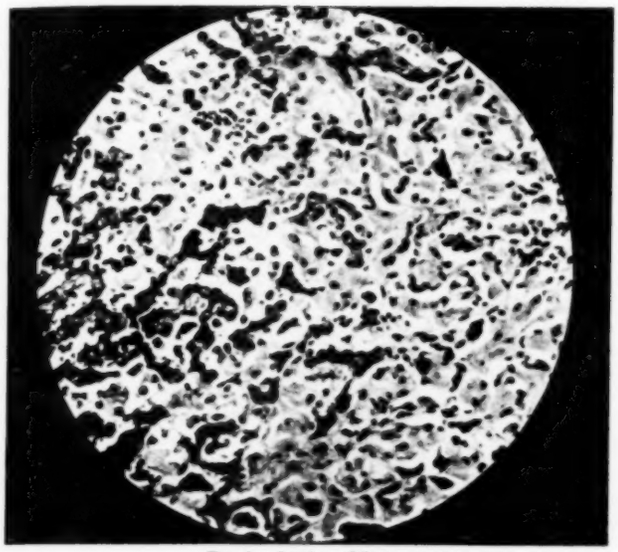


FIG. 1.—Section of liver.

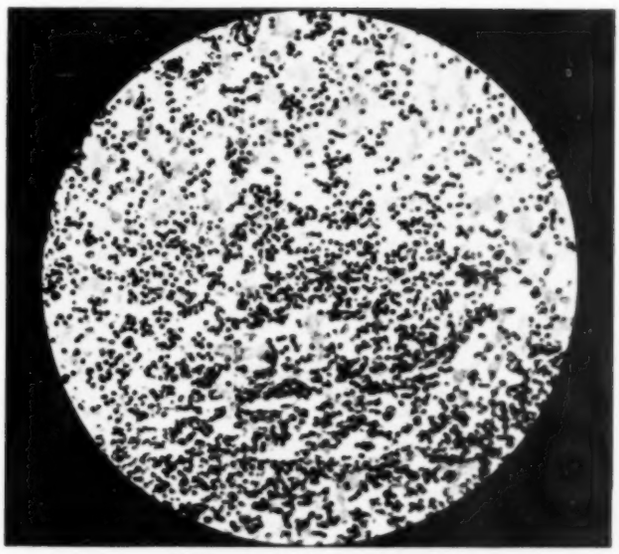


FIG. 2.—Section of a lymph gland.

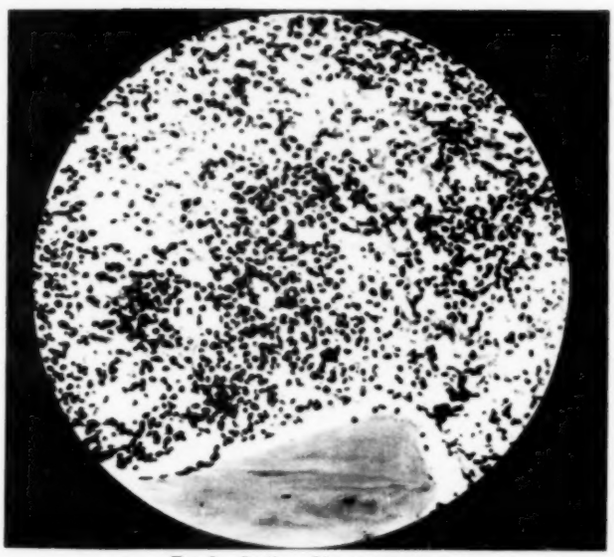


FIG. 3.—Section of bone marrow.

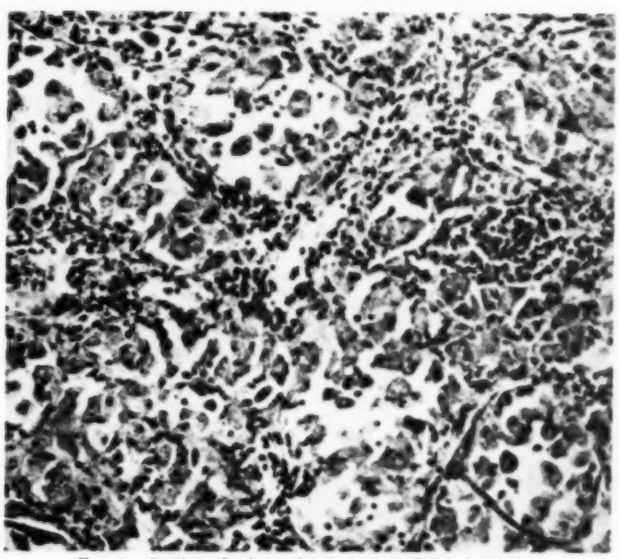


FIG. 4.—Section of spleen, showing nests of Gaucher cells.

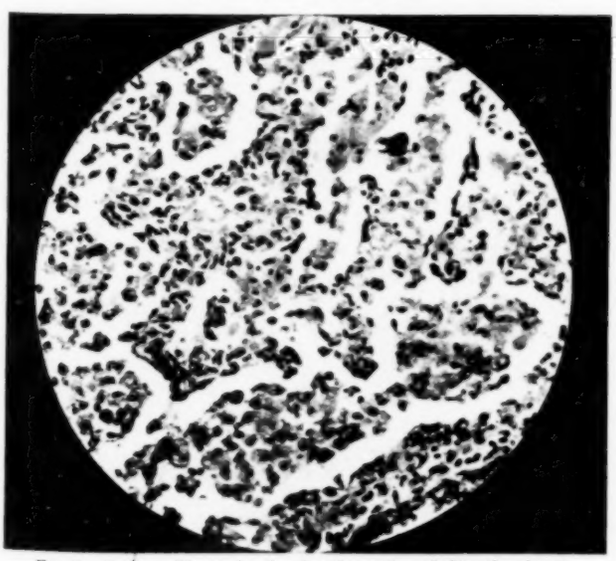


FIG. 5.—Section of lung, showing Gaucher cells occluding the alveoli.

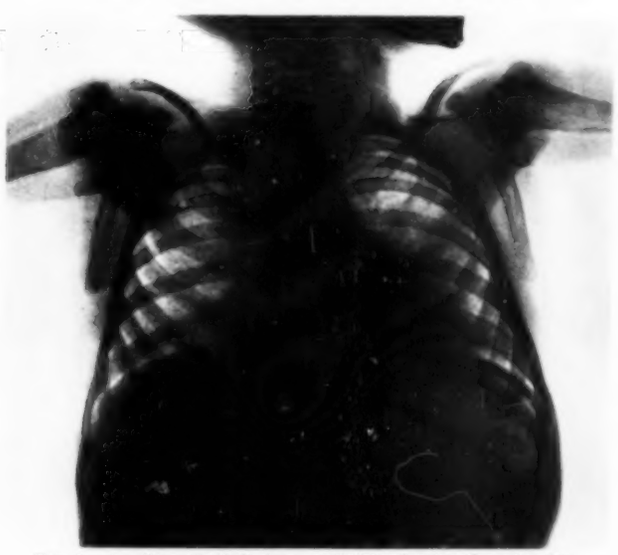


FIG. 6.—A radiograph of the lungs (26/8/35), showing the extension of the Gaucher process outwards from the mediastinum and towards the apices. This was taken just four months before death.

A. J. CLEVELAND AND A. P. AGNEW: A CASE OF CALCINOSIS

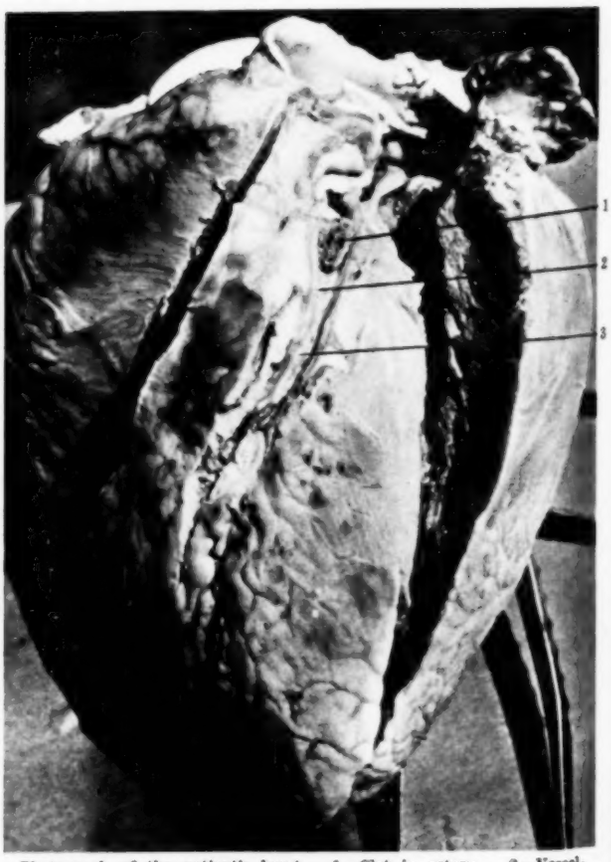
FIG. 1.—Photograph of left hand and left knee, showing nodular areas of calcinosis.

FIG. 2.—Radiograph of left hand, showing calcinosis in the middle and little fingers

GEORGE L. FOSS: TEMPORARY POSTPONEMENT OF MENSTRUATION BY OESTRADIOL BENZOATE

Typical menstrual mucosa with the cytogenic stroma cells showing marked menstrual or decidual reaction.

JOHN R. BLAZÉ: FATAL CORONARY THROMBOSIS IN A MAN AGED 23



Photograph of the patient's heart. 1 = Clot in artery. 2 = Vessel-descending branch of left coronary. 3 = Atheromatous plaques.

went to South Africa on grounds of health, and began practice at Kimberley in 1878. The lecturer recalled the circumstances of the Jameson Raid. Mr. Huggins, the present Prime Minister of Southern Rhodesia, was a Fellow of the Royal College of Surgeons.

Sun Yat Sen (1867–1925), who overthrew the Manchu regime and rose to be the "father of the Chinese republic," was also a doctor. One of his tutors and friends in Hong Kong was Sir James Cantlie.

Medical Training as a School for Statecraft

From this study of the doctor in politics and diplomacy, Sir Arthur MacNalty concluded, it would be readily apparent that members of the medical profession had played no small part in administration and government, and that they owed their success in a measure to their previous medical training. Not a few could attribute their rise directly to the recognition in their professional capacity of their fine qualities of character. This was certainly true of Sir William Petty, Sir John Finch, Sir William Knighton, Baron Stockmar, and Sir Starr Jameson. The medical eminence previously achieved by Guillotin, Marat, and Struensee certainly paved the way to political influence. Clemenceau rose to power through his gifts of oratory and literary expression rather than his knowledge of medicine. For the most part these men carried into politics the high ideals of the Hippocratic calling. The majority had not only been great but good men. Even in the exceptions to the rule redeeming qualities could be found. Marat had high political aims, though his methods of securing them were monstrous and indefensible. Struensee was a libertine and something of a scoundrel, yet he honestly desired to better the condition of Denmark.

"To-day in this country the doctor is playing an important and progressive part in the national life. He need not necessarily go into politics to do this, because the politicians come to him for advice and counsel. A special kind of medical adviser has arrived, the medical officer of health, who guards the health of the persons in his area and advises his council on appropriate measures for securing it. The leaders of the medical profession are frequently consulted on desirable health reforms. The Health Committee of the League of Nations has done much to improve health conditions abroad and to make medical knowledge and experience international. In all these ways the doctor exercises an influence on political thought and legislative action."

Sir Arthur MacNalty said in conclusion that from all this it was evident that the professional advice of the doctor was often utilized by the State not only for the benefit of individual patients but for the betterment of the whole community. His role was generally a more sheltered and inconspicuous one than that of the medical politician. Still, when the physician laid aside the rod of Aesculapius to enter the dust of the political arena his previous medical training stood him in good stead, and he might rise to be the chief executive of his country or to be its representative in another.

L. Bayer (*Zbl. inn. Med.*, May 1, 1937, p. 369) discusses at length the two apparently opposite theories of the nature of the inflammatory reaction—namely, the theories of Spiess and of Bier. Spiess introduced the conception of the cure of inflammation by anaesthesia, while Bier has shown the importance of hyperaemia for the healing of inflammatory conditions. The author was able to prove by experiment that a complete anaesthesia inhibits the setting in of an inflammation following injury, and that it favours healing when applied after the inflammation has already set in. The anaesthesia seems to act very favourably on chronic as well as on specific inflammatory changes —for example, lupus. The same principle applies to the cure of gastric ulcer. Acute and chronic ulcers heal rapidly and surely following repeated applications of an anaesthetic to the ulcer.

INCIDENCE OF WAR NEUROSIS

The third annual conference called by the Ex-Services Welfare Society was held in London on June 25 under the chairmanship of Dr. EDWARD MAPOTHER, when the subject taken for discussion was the control of the incidence of war neurosis.

The CHAIRMAN, in an opening address, said that it had been stated that cases of war neurosis formed only 2 per cent. of the medical casualties of the last war, but in reality if all that was truly neurotic had been called by that name the figure would have been much larger. One medical officer who had acted as a medical specialist in a hospital at home during the war estimated that one-third of the admissions to his wards were for purely neurotic complaints. In the next war disability through terror rather than through physical injury was likely to play an even larger part. One reason for this was the increasing importance of gas warfare; everyone agreed as to the frequency with which neurosis followed the experience of a gas attack. Three groups of problems arose under this subject: (1) the treatment of the malingerer before and after enlistment; (2) elimination of the potential neurasthenic during training; and (3) prevention and treatment of war neurosis actually in the field.

Malingering

The first of these problems raised questions of vital importance with regard to the examination of the recruit. It might be assumed that almost immediately after the outbreak of the next war the principle of universal liability to service would be accepted, subject to some form of exemption for real conscientious objectors. In 1914 the sudden expansion of the Army made complete chaos of the arrangements for the examination of recruits; in some cases a medical man examined 400 potential recruits a day. On a future occasion it would probably be possible to make better arrangements. It might well be questioned whether any definite exemption from liability to service should be granted on the evidence of medical certificates unless these were furnished by a doctor who had had the man under observation for the disability in question during several years. If examination of recruits was proceeding at a reasonable rate it might be possible to provide places of observation for doubtful cases.

As for the distinction between malingering and hysteria, objective evidence could be only indirect. The diagnosis must be based upon such things as variation of symptoms when the man was unaware of observation, variation according to his interests from time to time, discrepancies between his subjective symptoms and his behaviour, and, of course, his general character and his attitude towards treatment and recovery. In the pre-enlistment cases diagnosis might be more easy because the condition was less likely to be associated with anxiety neurosis. Malingering was often superimposed on genuine anxiety neurosis in the case of a man who had actually been in the line.

Elimination of the Neurasthenic

With regard to the second problem, the elimination of the potential neurasthenic, Dr. Mapother continued, it would be impossible to expect a medical man making a preliminary examination of recruits to give an exact forecast as to liability to neurosis. He might be able, however, to refer such cases to an expert who could judge whether the attention of the medical officer of the unit should be specially directed to him, and whether the man should be sent to an observation centre. There had recently been an active search for definite psychological tests of temperament, and there was evidence that these had some value in enabling a forecast to be made of probable response in future situations. It was so important to keep fighting units free from people who by their neurosis would destroy the morale of the unit and fill

the hospitals that it would be advisable to carry on some intensive research work into the possibility of identifying the men likely to break down.

The best way of eliminating the potential neurasthenic was to train him into a good soldier, and that was the task of the combatant officer. The men should be told during training that everyone was apt to be frightened, that it was neither a discredit nor an excuse for shirking duty, and that the interest of the individual soldier had to give way to the interest of the nation. It might be useful for combatant officers to note in their men any undue disturbance during firing practice, when learning to ride, or on first entering a gas chamber, and to refer those showing such disturbance to the medical officer of the unit.

It was recognized that the freedom of a divisional unit from war neurosis mainly depended upon the personality of its medical officer, upon his knowledge of men, and his handling of them. A very distinguished neurologist had said that the regimental medical officer should not be a peace-time psychologist, and with that he agreed, but personal experience suggested to him that there was room for one well-trained psychiatrist in a division, available for consultation with the medical officer of the unit, and also available to the A.D.M.S. when a high incidence of neurosis began to appear in a particular unit.

War Neurosis in the Field

The prevention in a collective sense of war neurosis among troops in the field, said Dr. Mapother, was a problem identical with that of the maintenance of morale, and was therefore largely one for the combatant officer. It depended upon such factors as contentment, the team spirit, and belief in the cause for which the men were fighting. It was generally felt by combatant officers that even if war neurosis was not regarded as discreditable to the individual an epidemic of it was discreditable to the unit in which it occurred. The introduction of the term "shell shock" to include emotional disturbances had been a serious mistake. He thought it was also generally agreed that, so far as military exigencies allowed, very few functional cases should have been sent back to England. It might have been necessary to discriminate between hysteria and anxiety neurosis, and send back men suffering from the latter condition, but even they should have been sent to hospitals where strict discipline was maintained. Many of those with most experience held that there should be no discharge from the Army during war-time on account of functional disturbances.

Dr. C. S. MYERS, referring to the treatment of war neurosis in the field, stressed the importance of a man being seen by a specialist immediately he was sent away from the fighting line. There should be specialists at the clearing stations to differentiate between cases which would be curable in two or three weeks and the severe cases which required evacuation to the base hospital, where again there should be a specialist to decide whether the cases should be sent to England or not. His own experience had been that where there was dissociation of any kind, either exhibited physically, as in hysterical paralysis, or in loss of memory, immediate treatment was of the utmost importance. There were no certain tests of temperament and character at the present time, and it was very desirable that further research should be carried out on the subject. Major-General H. A. EMERSON (Director of Hygiene, War Office) said that the subject of examining recruits was receiving consideration, and an attempt was being made to evolve a system which would give a reasonable rate of examination. At such an examination men would only be marked unfit if definitely so; those about whom there was any doubt would be marked as temporarily unfit and reserved for observation.

Potential War Neurotics

Dr. W. R. D. FAIRBAIRN (Edinburgh) said that the training period should be used for the elimination of potential as well as overt neurotics, and the situation would be most practicably met by a staff of visiting psychiatrists being allotted to each training area. The elimination of potential war neurotics would be best secured if every recruit received a psychiatric examination, but such an arrangement would be rendered impracticable by the insufficient number of psychiatrists, so it would be necessary to select the recruits for the psychiatric examination. The selection could best be made by the visiting psychiatrist receiving a verbal report on each recruit from those best qualified to observe his daily reactions—that is, his immediate superiors—and also a report on his previous nervous history from his family doctor. From those reports the psychiatrist could select the recruits for personal examination. He thought that psychiatric science had reached a stage at which, given adequate data, the psychiatrist ought to be able to eliminate a fair proportion of potential war neurotics from the main body of recruits during the training period.

Major J. BENNETT said that in his experience deliberately attempted simulation was not common in our present peace-time Army, but malingering by affirmation that a condition still remained which in reality no longer existed was more common. Such cases merged gradually into those which were regarded as neurotic, and no sharp line of demarcation could be drawn. The longer the period spent in hospital the more difficult became the problems with which the medical officer was confronted. Intensive efforts to cut down periods spent in hospital must be an important factor in the control and incidence of war neurosis. He felt strongly that there was a risk of increasing the incidence of hysterical mental states in too often acknowledging defeat by classifying such cases as unfit for service. Mental defects associated with hysterical modes of reaction called for invaliding, but other cases required individual consideration.

Effective Service of Neurasthenics

Dr. J. F. E. PRIDEAUX (Ministry of Pensions) said that he had thought it would be interesting to ascertain the effective service of the neurasthenic. He took for comparison the healthy soldier who had been only slightly wounded in the arm or leg. The effective home service of the slightly wounded, healthy soldier was 33.2 months and that of the neurasthenic 32.8 months. With regard to oversea service, the effective service of the slightly wounded, healthy soldier was 17.8 months and that of the neurasthenic 19.6 months. Some neurasthenics did very good service over-seas for four years, while others did only a month or two, and it would be an advantage if that type could be eliminated. He suggested that there should be a closer examination of the trainee, that reports should be made by N.C.O.'s and company officers of any special stress shown during gas practice, gunfire practice, and so on, and also that there should be a longer period of training in any doubtful cases. It had struck him that the greater number of cases had broken down under the age of 20 and over the age of 35, and it would therefore seem that those under 20 should have a longer period of training and those over 35 more frequent periods of rest behind the front line. There was no reason why a more careful examination of the officers should not be carried out, every officer being examined by a neuro-psychiatrist. Instruction with regard to neurasthenia should be given to medical officers, and there should be some improvement in the education of medical students in that respect.

Dr. BERNARD MYERS urged that in doubtful cases in the examination of recruits a further investigation should be made and reports obtained from the school master, the employer, and the family doctor. It was found in the New Zealand Forces during the war that if a man who had broken down could be got back to the line quickly he was usually fit for active service again, but if he got right away and associated with other neurotics his condition became hopeless. Dr. H. B. JEFFS (Department of Pensions and National Health, Canada) said that a

considerable amount of wastage in the Canadian unit during the war was avoided by the establishment of a rest station behind the lines to which men slightly shell-shocked or slightly neurasthenic were sent.

German Experience

Dr. MAYER GROSS (Maudsley Hospital) said that in the German Army during the war there was an increasing amount of war neurosis. At the beginning there was greater choice of men, and those who were maladjusted from the social point of view could be eliminated. It was a very significant fact that in one of the large hospitals in Germany where neurotics were treated it was found that 50 per cent. of those neurotics were former criminals and had a considerable list of convictions. He was doubtful whether there was in existence at the present time a sure test for morale, or courage, or other qualities which were necessary in war time to avoid neurotic breakdown. The best and most reliable method, he thought, was that used in routine psychiatry—namely, an investigation into the life-history of the patient and the obtaining of records from his school and his employer.

With regard to the question of treatment it was found during the last war that it was most inadvisable to send neurotic cases home. In 1916 of 435 war neurotics who had been sent home to special hospitals and had been cured and discharged only twenty-seven went back to the front line, and of those twenty-seven only five did their full service as privates in the front line; all the others went to ammunition factories and so forth. In view of that an effort was made in the German Army to treat neurotics in the base hospitals instead of sending them home.

Dr. L. H. WOOTTON (St. Ebba's Hospital, lately Ewell Colony) stressed the importance of having consultant psychiatrists in the field. During the war he had been acting as a battalion medical officer, but eventually it was discovered that he knew something about psychiatry, and he was asked to see various people who had been accused of cowardice, sleeping on duty, and so forth. He found that cases of dementia praecox were being treated by field punishment No. 1. Nearly all the cases were genuine ones, and ought to have been treated by an expert; the battalion medical officers had no knowledge at all of how to deal with them. He saw a considerable number of cases during the war of men who had been accused of dereliction of duty in the field, for which they could have been shot, and they were genuine psychotics. With regard to the possible shortage of psychiatrists in the next war, if it was a war of terror against both the military and the civilian population, there might be more cases of war neurosis than of war wounds, and it was most important that there should be an adequate supply of properly trained psychiatrists. Badly applied psychiatry could do quite as much harm as badly applied surgery.

Dr. JAMES MACDONALD (Glasgow) thought it should not be difficult for a man of experience to detect the malingerer; there was nearly always something that did not fit properly into the clinical picture. The real difficulty was in segregating the malingerer from the hysterical patient, but the trained psychiatrist and neurologist ought to be able to distinguish between them. It did not follow that when a psychotic had been detected he should be eliminated from the Army; many psychotics could do useful work in the field. With regard to the detection of potential psychotics psychiatry had not yet reached the stage when the psychiatrist could give a definite opinion even after the most careful examination. Laboratory tests helped a little, but they were not by any means a sufficient and reliable guide; the real test was the practical test, when a man came under the actual strain and stress of war. There was an urgent need for more psychiatrists. He suggested that young men should be persuaded to join the Territorial Army, because the great danger lay in the sudden imposition of war conditions upon men who had never had any idea of going to war.

Value of Physical Training

Colonel J. HEATLY-SPENCER (Consulting Physician to the British Army) thought it was desirable that neurotics should be eliminated from the Army, but the question arose as to where they were to be sent in the next war. There might be just as much danger in the areas behind the lines and at home from air raids as there was in the fighting line. Army training aimed at teaching a man self-reliance and responsibility as well as the handling of weapons. He thought it was successful in that aim, but it took some years to make a good soldier, and the difficulty really arose in the civilian population enlisted at short notice. He suggested that the problem ought to be examined on a wider basis and at an earlier stage than that of actual enlistment. He would take as examples two widely differing types: first those men who flocked to any excitement from this country and all over the Empire. They had developed, mainly from an open-air life, a sense of self-reliance and responsibility, a mental resiliency, and a standard of conduct which placed personal bravery before anything else. Such men did not break down. At the other extreme there were the men taken suddenly away from industrial life in England or elsewhere; many of them had had very little opportunity of developing self-reliance and responsibility which would enable them to deal with the unexpected, or with danger when it suddenly confronted them. He did not think they required military training so much as the opportunity to develop themselves, particularly in the physical sphere, and to establish contacts which would enable them to develop self-reliance. In the youth movement, the playing field movement, and other such movements he thought the ultimate solution of the problem of neurasthenia, not only in the Army but also in industrial life, would be found.

The CHAIRMAN, in summing up the discussion, said he thought everyone was agreed as to the need of treatment from the first moment, and that meant that there must be a large supply of psychiatrists available if the problem was to be dealt with in the field as well as at home.

At the luncheon, given by Admiral of the Fleet Sir REGINALD TYRWHITT, which followed the conference, it was announced that the Ex-Services Welfare Society proposed to establish a home on the coast for the use of ex-service men in mental hospitals in Great Britain who, in the opinion of the medical superintendents, would benefit by a change of surroundings.

STUDENTSHIPS AND FELLOWSHIPS IN CLINICAL SCIENCE AND EXPERIMENTAL PATHOLOGY

The Medical Research Council invites applications for a second series of Studentships and Fellowships intended to encourage young British medical graduates of special ability and original mind towards becoming investigators in those branches of medical science which are concerned directly with disease as it occurs in human beings. This field of research includes investigations into disease or manifestations of disease in patients, together with experimental work of an immediately relevant kind.

Post-Graduate Studentships

Six post-graduate studentships are offered for medical graduates who have already held house appointments and are strongly inclined to a career in clinical science or experimental pathology. Each selected student will receive an inclusive grant at the rate of £200 per annum, during a period not exceeding twelve months, for personal maintenance while undertaking approved courses of study in this country such as may be regarded as best calculated to advance the student's training in methods of research. This study may include modern languages and such advanced physiological, pathological, and special clinical work under recognized teachers as

may be regarded as forming a suitable preliminary to serious research work to be undertaken later; but the approved course may not include studies of which the purpose is to enable the student to pass further examinations.

Research Fellowships

The Council also offers four research fellowships for candidates of similar qualifications who have already had some experience in the use of research methods. Each Fellowship will be tenable for one year at the ordinary value of £250 per annum, and will be renewable in approved instances at the rate of £300 per anum for a second year. These Fellowships are intended as probationary appointments for research in clinical science or experimental pathology under suitable direction in this country. Research expenses may be provided in addition to stipend.

Applications should be lodged with the Secretary, Medical Research Council, 38, Old Queen Street, London, S.W.1, before October 1, 1937. Forms for the purpose will be supplied on request.

TUBERCULOSIS IN CYPRUS

We have received from the National Association for the Prevention of Tuberculosis the following report of its mission to Cyprus.

A Request for Help

During the year 1935 two members of the Council of the N.A.P.T., Mrs. Pam and Mr. H. A. Baker, visited Cyprus and had their interest aroused by what they were told of the serious ravages of tuberculosis on the island. It was pointed out to them that Cyprus is a poor island, with much to do with its money upon developing essential services; its governing authorities would welcome help and advice from the N.A.P.T. in dealing with the problem of tuberculosis, which hitherto had not been seriously taken in hand.

The request was favourably received by the Council of the N.A.P.T. with the result that an immediate contribution of £100 towards the Cyprus anti-tuberculosis campaign was followed by the promise to send to Cyprus a medical officer and a nurse with special experience of the work of a tuberculosis administration. The officers selected for this duty were Dr. Noel Bardswell, F.R.C.P., and Nurse Jays of the Seamen's Hospital, Greenwich, who has lived in the Near East for many years and speaks Greek, the chief language in Cyprus. The N.A.P.T. officers took up duty in Cyprus on November 1, 1936, and have since then worked in close co-operation with the Public Health Department of the Cyprus Government. Dr. Bardswell has just arrived home on leave, and is making a report to the N.A.P.T. on the work he has so far carried out on the island.

Local Conditions in Cyprus

Cyprus became a Crown Colony during the great war; Britain then took over the country, which centuries of neglect had left in an undeveloped condition. It is still backward and primitive, and not yet ready for a highly developed administration. It is an island of mixed races. Of its population of 365,000, 299,780 are of Greek extraction and 65,220 Turkish. The British population numbers some 600 only, and are most concentrated in the capital, Nicosia. The languages spoken are Greek and Turkish—outside the six chief towns the English language is unknown, and in the towns only a small minority of the people can speak English.

Dr. Bardswell, on arrival, found that while much was to be heard about the Cyprus tuberculosis problem and its seriousness, there was little definite data available. There is as yet no registration of causes of death other than "from natural or unnatural causes." In consequence the Cyprus Government has no idea as to the annual mortality from tuberculosis. Notification of cases of pulmonary tuberculosis was introduced in 1931, but it is most imperfectly observed. The medical authorities think it probable that only one-quarter of the cases are notified. The introduction of an administrative scheme for the control and treatment of tuberculosis was being held up by the absence of definite knowledge as to the incidence of the disease on the island and the degree to which it is disorganizing the life of its people.

First-hand Study of the Problem

Dr. Bardswell, after a preliminary survey, reported these facts to the Council of the N.A.P.T., and advised that as a preliminary to their offering any advice to the Cyprus Government he should tour the island and try to make good the absence of essential information. The N.A.P.T. and the Cyprus Government concurred in the suggestion.

From January 1 to June 1 Dr. Bardswell and Nurse Jays have been wholly occupied in studying the tuberculosis problem at first hand throughout the island. They encountered many difficulties by no means fully anticipated. The chief of these is the question of language. Dr. Bardswell had to make all his inquiries through an interpreter. Fortunately, so far as Greek is concerned, the language spoken by five-sixths of the people, his interpreter was his N.A.P.T. colleague Nurse Jays, who speaks Greek perfectly. But for this Dr. Bardswell's mission would have been most gravely handicapped.

Another difficulty is the extraordinary and unreasonable fear that Cypriots of all classes have of tuberculosis, which results in the concealment of the disease. Such is the fear that many people will not willingly pass a consumptive patient in the street. The stories current on the island as to the ravages of the disease among the peasantry, who form 70 per cent. of the population, and the social and economic distress suffered by the tuberculous people, have for some time caused much concern to the people of Cyprus and its Government.

Preliminary Impressions

The method of inquiry followed by Dr. Bardswell was to visit the towns and villages throughout the island, to examine as many people suffering from tuberculosis as he and Nurse Jays succeeded in getting access to, and to try and estimate the amount of tuberculous infection present in the towns and villages by "tuberculin-testing" the children for evidence of tuberculosis infection.

In the course of his five months' survey Dr. Bardswell examined 600 persons and tested 8,000 children. His detailed results have yet to be worked out. But it can already be stated that the tuberculosis question is not so grave as has so far been the accepted view.

Though the disease is scattered throughout the island, and is calculated to spread as the primitive people are gradually brought under European influence, there is every hope that it will be effectively controlled by appropriate methods. What lines these measures should take will now be a matter for the serious consideration of the N.A.P.T. Council.

The language difficulty, the low standard of civilization of the bulk of the people, the difficulty of access and transport, the lack of personnel with any knowledge of or training in tuberculous work, the poor financial resources of the Cyprus Government, all contribute to render an efficient anti-tuberculosis scheme in Cyprus much more difficult to devise than in Great Britain.

While certain broad principles hold good for every country, details must be decided by their peculiar conditions. This is the aspect of the Cyprus tuberculosis question which the N.A.P.T., with the results of Dr. Bardswell's survey in its hands, will now proceed to consider. Whatever advice it conveys to the Cyprus authorities, the services of Dr. Bardswell and Nurse Jays will again be given to them for a further period to assist in putting their recommendations into execution, the period of office of these two officers having been extended to June, 1938.

The seventeenth report of the Joint Council of the Order of St. John and the British Red Cross Society covers the year 1936. During that period 259 officers, of whom seventy-four were new cases, received assistance from the Auxiliary Hospitals for Officers Department. The majority of these were suffering from tuberculosis.

Nova et Vetera

ORIGINS OF THE HOSPITAL SYSTEM

[FROM A CORRESPONDENT]

In connexion with the report of the Voluntary Hospitals Commission, which was reviewed in the *Journal* of May 8, it may be interesting to look back into the early origin of our modern hospital system.

London Spitals

When the monasteries were suppressed the Mayor and Commonalty of the City of London prayed the King in 1538 that they might from henceforth have "the order, rule, government, and disposition of the hospitals or spitals, commonly called St. Mary's Spital (Bethlem), St. Bartholomew's Spital, St. Thomas's Spital, and the New Abbey at Tower Hill, with the rents, revenues appertaining to the same for the annual relief of the poor, needy, and sick persons." They reminded the King that the three great spitals were

"founded of good devocion by auncyent fathers and endowed with great possessions and rents only for the relyeff comforte and ayde of the poor and indigent people not being hable to help themselffs and not to the mayntenance of preestes chanons and monks casually lyvyng as they have of late doon nothing regarding the myserable people lyeng in the streets offending every clene person passing by the way wt theyre fylthye and nastye savors."

The prayer of the Corporation was granted. The first spital handed over to the civic authorities was St. Bartholomew's. Soon the revenues became too small to meet the outgoings, and to defray the deficiency the Corporation had the power to levy taxes for its support.

In 1548 an Act was passed by the City Council assessing the City Companies in the sum of 500 marks (£333), to be paid annually to St. Bartholomew's Hospital. This levy was resisted by the livery companies in the year 1712, but the hospital authorities took Chancery proceedings, which resulted in a decree in their favour, and this exists to the present day.

An Early Move in Bristol

Outside of London no provision at all for housing the sick poor appears to have existed. In Queen Elizabeth's reign some effort was made by means of a Poor Law to cope with poverty and unemployment; to replace by local authorities the work formerly carried out by the monasteries. But little or nothing was done for the sick or crippled. The civil wars diverted people's attention even from this effort. After the revolution of 1688 and incidentally after the passing of the Act of Toleration in 1689—which is perhaps the real landmark in the current of national progress—men's thoughts turned in other directions. There was a spiritual awakening; a kind of humanity replaced the bitterness of wars and revolution.

The first move to look after the sick and needy was made in Bristol. It is interesting to record that the first hospital to be established in England after the suppression of the monastic hospitals was not a voluntary hospital in the modern sense, but St. Peter's Hospital in Bristol, which was set up by the Bristol Corporation of the Poor immediately after its establishment in 1696.

At the foundation of the Corporation of the Poor and of St. Peter's Hospital it will be found that a compulsory levy or rate was not the sole source of their revenues. Many private citizens, including Dr. Edward Tyson, moved by the contemplation of the state of the poor in their city, gave large donations. Dr. Thomas Dover gave his services gratuitously to the sick in St. Peter's Hospital. So that at the beginning the Poor Law and its hospital linked together rates and charity in a common purse.

Two Illustrations from Abroad

Two illustrations of somewhat similar plans may be taken from abroad. A good many years ago M. Vancauwenberg founded in the North of France a sanatorium for children suffering from surgical tuberculosis. It is now situated in two branches, one at Berck-sur-Mer and one at Zuydcoote, near Dunkirk. At first the undertaking was supported entirely by voluntary contributions. Its success led to its "adoption" by the State. The effects of this "adoption" as explained by M. Vancauwenberg were that the educational side of the sanatorium, including teachers' salaries, was paid for by the State, and various maintenance charges for the children were borne by departments and communes. The committee of management was no longer self-elected, but the State requested the old committee, with M. Vancauwenberg as chairman, to continue in office with the addition of a few new members to represent public authorities.

Since Professor Calmette joined the committee as the representative of the Département du Nord it may be judged that the presence of such "official" nominees to the board of management occasioned no difficulties. According to M. Vancauwenberg the institution was better off in every way after its "adoption," especially in financial respects; for the voluntary contributions increased rather than diminished, there were new payments by the State and local authorities, the "School" was entirely paid for by the State, and the usefulness and efficiency of the institution was greatly increased.

From Cologne another example could be taken. The Evangelische Krankenhaus was a hospital maintained and supported by the Lutheran community of the city. Voluntary contributions came in generously, and the board of management was chosen by the subscribers. Yet there was a basic grant from the city which amounted to a capitation payment for poor patients. This payment was contingent on the hospital being efficiently conducted. Of this efficiency the medical officer of health for Cologne and the Health Committee were the judges, and in order to keep in close touch with the affairs of the hospital one "official" representative of the Health Committee was on the board of management. In this instance there was no curtailment of voluntary contributions because of municipal finance and control.

Some Reflections

These examples of happy uniting of public and voluntary undertakings need to be closely looked into. The plan may prove impracticable on a large scale. It may turn out that charitable and individual effort has led the way and only served to convince the State of an irresistible demand for adequate medical and social services. Our Navy was evolved out of mere gatherings of merchant shipping armed in haste for particular occasions, our Army from bands of noblemen's retainers, and our Post Office from the attempts of private carriers to serve the public needs. Private undertakings will not cover the country with the comprehensive organization which the nation requires. At some point the gaps must be filled by State institutions, and it should not be impossible to preserve the practice of voluntary contributions, just as St. Bartholomew's has preserved it, within the framework of a municipal institution. The correlation and adaptation of two systems may entail inconveniences. Burke's plan must be followed, so that we "balance inconveniences; we give and take; we remit some rights that we may enjoy others; and we choose rather to be happy citizens than subtle disputants."

Reports of Societies

THE SILICOSIS PROBLEM

Another discussion on silicosis, chiefly from the geochemical standpoint, occupied a special meeting of the Institution of Mining and Metallurgy on June 17. Professor H. V. A. BRISCOE of the Royal College of Science, with certain colleagues, had collected from a number of mines in Cornwall dust samples suitable for examination in order to determine the number of dust particles per unit volume of air, and their size, distribution, and chemical and mineral composition in the air as breathed by the underground worker. The results of this investigation were presented in a lengthy and important paper, while Dr. A. BRAMMALL in another paper dealt with geochemistry as applied to the problems of silicosis.

Professor Briscoe stated that a rapid survey of some typical dangerous industrial dusts, using samples collected by settlement and natural impingement of dusts in ventilating ducts in mines, showed that in general they were markedly alkaline. It seemed possible that the relatively high local concentration of alkali produced by some such dusts might help to determine the characteristic effects they had on the lung; for example, to account in part for the differences between the phenomena of asbestosis and silicosis. Dr. Brammall, after reviewing his own lengthy investigations, said that the evidence suggested that certain substances were extracted in the soluble form from dust-fine particles by lung fluid, and that these dissolved compounds—of which silica was merely one—together with inert residuals imposed an abnormal burden on a delicate though miraculously efficient machine.

Those who took part in the discussion from the medical point of view counselled the exercise of caution before accepting a geochemical theory to explain silicosis. Dr. E. L. MIDDLETON of the Home Office deprecated at the present stage any deductions being drawn from the experiments and researches presented so far as they applied to the human problem. He found it difficult to fit the facts presented by the geologists in their study of dusts into the clinical experience of silicosis.

Tissue Reactions

Dr. E. J. KING of the British Post-Graduate School, speaking as a biochemist, also added his plea that those working on this subject should take care not to fall into the common modern danger of simplifying the problem too far. They would only be deluding themselves, he said, if they thought that the solubility of dusts, even when determined so nicely as in the experiments described by Dr. Brammall, was an adequate explanation of silicosis, which he regarded as an extremely complex biological phenomenon. Dr. King mentioned that he had once injected soluble salicylic acid twice daily into the ears of rabbits over a period of six months. No fibrosis whatsoever was produced, nothing but a small amount of inflammation periodically. A fairly constant supply of soluble silica produced no biological reaction at all analogous to that which followed the introduction of dust. Moreover, as the late Professor Kettle had constantly stressed, there was an infective process at work in silicosis. Such an infective process always accompanied the condition, and perhaps made it possible. Silicosis might not be a tissue reaction primarily to dust but a tissue reaction to an infection which might be modified to a greater or less extent by the accompaniment of dust. Mr. HAYNES of St. Bartholomew's Medical School reminded the meeting of the long period during which dust might remain in the lungs, being ultimately passed out by coughing, or "black spit," as it was called. He remembered in 1919 examining a miner's sputum which contained undoubted coal dust, but the man had not been down a coal mine nor had he had any reason to inhale coal dust since his enlistment in 1914. He could not help feeling that the way in which dusts had been extracted from the lungs and subjected to chemical examination in the pursuit of certain of the investigations into silicosis had been somewhat rough. A much easier way of obtaining the dust would be by trypsin digestion, whereby the whole of the proteins could be got away and the dust left behind. A treatment rather corrective to the chemical substances might possibly have removed some of the less chemically resistant ones, leaving the more resistant, of which sericite was the outstanding example. Thus a slightly unbalanced picture might have been obtained.

INFANT FEEDING

At a meeting of the Edinburgh Obstetrical Society on June 9, with the president, Dr. DOUGLAS MILLER, in the chair, Dr. H. L. WALLACE read a paper on the modification of cow's milk for infant feeding.

Dr. Wallace said that not infrequently the newborn infant was relegated by the medical attendant to the care of the nurse, who was given the responsibility of deciding how the infant was to be fed. This arrangement was usually quite satisfactory in the event of the infant being breast-fed, but if artificial feeding had to be resorted to then the infant became a medical problem demanding the attention of all concerned in its welfare. There was still no uniformity of opinion regarding the best substitute for human milk, since, although cow's milk was almost universally used for this purpose, sharp differences of opinion existed as to the form in which it should be offered to the infant. The speaker then mentioned various ways in which cow's milk could be modified for infant feeding, and described certain experiments which had recently been carried out in the biochemical laboratory of the Sick Children's Hospital in an endeavour to determine the relative merits of the various modifications commonly employed.

Experimental Investigation

These experiments were concerned with the clotting effect of rennin on modified milk. It was pointed out that such simple procedures as dilution with water and boiling had the effect of reducing both the size and toughness of the milk curd, and that the addition of sodium citrate had very little advantage over dilution and boiling. Acidification of milk by the addition of lactic acid prevented the formation of large clots and produced a fine granular precipitate. The addition of partially dextrinized starchy foods to milk did not affect the size and consistency of the clots, since on the addition of rennin these were found to be large and tenacious, closely resembling those of raw milk. If fresh cow's milk were to be used for infant feeding it should be diluted with water, boiled, and have added to it sugar and cream in requisite amounts; the addition of starch was undesirable; citrating and acidifying were unnecessary for normal infants. Two varieties of dried cow's milk were selected for comparison with fresh milk. In one case drying had been carried out by the roller process and in the other by the spray process. When rennin was added to milk dried by the roller process a fine precipitate was formed but no true clotting occurred, whereas in milk dried by the spray process clotting did occur, but the individual curds were comparatively small and soft. In both cases, after gentle shaking to simulate peristaltic action, the appearances produced bore a striking resemblance to that of human milk.

Taking all things into consideration the best available substitute for human milk was a good variety of dried milk, the reasons for this opinion being that such milk was safe in that it was free from tubercle bacilli and pathogenic

organisms; its vitamin and iron content was adequate; it was quickly and easily prepared, thereby reducing the possibility of error to a minimum; and it had been made to resemble human milk to an extent which could never be achieved in the average home. Dried milk, however, was apt to be expensive and was, therefore, often beyond the reach of the very homes where its use would be invaluable—namely, the homes of the harassed, overworked mothers, who had neither the time nor the facilities to make cow's milk safe and digestible for their babies. In conclusion, Dr. Wallace emphasized the fact that the perfect substitute for mother's milk did not exist, and that breast-feeding should still be the aim in all cases.

Local News

ENGLAND AND WALES

British Red Cross Society

The Duke of Gloucester presided at the statutory meeting of the council of the British Red Cross Society on June 10 at 14, Grosvenor Crescent, London, S.W. Before the formal business began the Duke presented the Florence Nightingale Medal to Mrs. Maynard Linden Carter, head of the Nursing Section of the League of Red Cross Societies. The Director-General announced that the four-yearly International Red Cross Conference would be held in London in June, 1938. The Society's annual report was received and approved. This report shows continued expansion both of personnel and activity. Considerable progress has been made in the special training and organization of its membership in order to co-operate with the Government in preparation for defence against aerial warfare, and the regulations have been extended to include the enrolment of air raid precautions reserves. The Clinic for Rheumatism in London is now working to its maximum capacity, and gave 154,378 treatments during 1936. The number of calls on the London Blood Transfusion Service amounted to 5,215, another record over any previous year. In order to facilitate experiments in the relief of certain forms of disease by means of oxygen tents the Society provided twelve tents and placed these at the disposal of twelve teaching hospitals in London. The tests carried out proved of great use, and the Society's action encouraged the use of this valuable method of treatment. The Princess Royal, Commandant-in-Chief, reported that over 800 women members attended the V.A.D. training camp this summer at Winchester, where courses of instruction had been provided. On Coronation Day 944 officers and members were on duty in London in co-operation with the St. John Ambulance Brigade, and dealt with 1,428 cases. The total number of certificates and proficiency badges awarded by the Society for first aid in chemical warfare now amounted to 29,079.

Reduction of Out-patient Waiting

A further step towards the reduction of waiting in out-patient departments has been taken by the Out-patient Arrangements Committee of King Edward's Hospital Fund for London by the issue of a memorandum on time-saving methods in connexion with arrival and registration of out-patients, with notes on other early items of procedure. A previous memorandum dealt with hospital out-patient dispensaries. The Out-patient Arrangements Committee, of which Dr. Morley Fletcher is chairman, was set up as a result of the report of a special King's Fund inquiry into out-patient methods. That report gave a brief outline of time-saving suggestions at every stage of out-patient procedure, and recommended that the King's Fund should follow this up in more detail, so as to assist all hospitals to ascertain whether their own waiting time is capable of reduction, and, if so, how to reduce it. The report states that very much has been and can be done by hospitals to reduce waiting by shortening the interval between the time when patients arrive and the time when they see the doctor. Part I deals with these possibilities under such headings as different times of arrival for different patients; group or class appointments; sorting; sifting; general supervision. Part II deals in detail with registration. It describes a system based on the latest improvements in such matters as the number and design of the forms, their use at the registry, at the various departments and at the dispensary, and indexing and filing. Part III gives a list of salient points in a form intended to be of use to a hospital reviewing its procedure. Copies of the memorandum may be obtained from the publishers, Messrs. Geo. Barber and Son, price 1½d. net, post free.

Birmingham Health Congress

About 2,000 people will be in Birmingham for the health congress which is to be held there by the Royal Sanitary Institute from July 12 to 17. It is expected that a record number of delegates will be appointed to attend from Governments and local authorities in all parts of the world. The Earl of Dudley will be installed as president of the Congress on July 12 and will deliver his inaugural address. The congress luncheon will be held at the Grand Hotel on Monday, July 12, at 1 p.m., and the congress dinner at the same place on Thursday, July 15, at 7.45 p.m. The Minister of Health has promised to address a general session on July 13. The comprehensive list of papers to be read includes such subjects as the future of our population, the national fitness campaign, development of the maternity service, care of the pre-school child, housing progress and prospects, slum clearance, roads and public health, and protection of bulk milk. Altogether there will be fifty addresses and papers. At the exhibition in the Bingley Hall manufacturers from all parts of the country will be represented, and there will be exhibits illustrating municipal hygiene and health and comfort in the home.

SCOTLAND

Medical Education

Speaking at Edinburgh on June 17 on the national drive for health and nutrition, Dr. Chalmers Watson said that the Government programme to promote a great national drive in the interests of health, nutrition, and physical education had done little or nothing to secure the interest and co-operation of general practitioners, who ought to be able to play an important part in the Government's scheme. Much had been heard lately about improved national health and increased longevity, but statistical evidence, on which these statements were based, must be interpreted with caution; employers of labour and others interested would do well to note that the Department of Health in its last report revealed the fact that the cost of sick benefit for insured persons last year showed an increase of 10 per cent. over the previous year. Medical education was to-day more closely related to medical treatment than it used to be, but a continuation of this relationship would depend largely upon a progressive attitude on the part of the universities. The Scottish Committee on Health Services had reported last autumn that unless medical training was preventive in outlook many of the committee's recommendations for the development of health policy would be stultified. In 1932 the League of Nations had gone into this matter, and had published several volumes recording the opinions of medical representatives of various countries. Their main conclusions had been that reform had long been called for, but that universities and teaching schools were either unable or unwilling to move in the matter. It had been announced by the medical faculty of Edinburgh University that a

comprehensive series of changes in the curriculum was about to be made to bring medical education more into line with modern requirements, but traditions died hard, and the changes that were necessary would not be easily secured. A more efficient medical curriculum would undoubtedly involve increased expenditure, but that expenditure would be amply repaid by the greater value of an improved curriculum.

Dundee Royal Infirmary

At the annual meeting of governors of Dundee Royal Infirmary on June 14 the report which was submitted showed that the ordinary income for the previous year had amounted to £48,393, which was an increase of £449 upon that of 1935. There had, however, been an increase in expenditure of £1,642, and the deficit on the year's working amounted to £7,577. Mr. David Air, the chairman, said that the financial position had caused grave concern, and could be improved only by the increased generosity of all subscribers. It was hoped that the public who valued the work carried on efficiently by voluntary hospitals would show their appreciation by an increase in both contributions and legacies and substantial donations.

Correspondence

Population Investigation Committee

SIR,—We should be grateful if you would give us the opportunity of correcting, in your columns, a misconception which has arisen about one of the activities of the above committee. At present there is little accurate information available as to the amount of physiological sterility existing in this country; we are still in doubt as to whether this is increasing or decreasing, and as to the part which it plays in the decline in fertility. With the object of obtaining accurate data on this and other aspects of the problem of fertility our committee has prepared a questionary of which very misleading accounts have been published in the Press.

We should like to point out (1) that the questionary has been produced on the sole initiative of our committee, and that neither the Ministry of Health, the General Register Office, nor any other organization is in any way responsible for it; and (2) that it will not be sent direct to parents or other members of the public. We are not yet in a position to give full particulars of the procedure by which we hope to obtain the desired information.—We are, etc.,

EARDLEY HOLLAND.
C. P. BLACKER.

London, S.W.1, June 24.

The Age Incidence and Sex Incidence of Milk-borne Typhoid

SIR,—An interesting comparison may be made of the figures for the Bournemouth epidemic given by Professor R. M. Picken (*Journal*, June 19, p. 1284), and those recorded by Dr. R. W. Johnstone (1910)[1] for the Folkestone Urban District during the fourteen years 1896–1909. A total of 357 cases of typhoid fever occurred in that period, and of these 206 were traced to milk infected by one individual, who was eventually proved to be a typhoid carrier. Among the milk-infected cases children under 15 numbered seventy-eight, or 37.9 per cent., while among those presumably infected in other ways the percentage of children under 15 was 27.2.

In the age groups over 15 the sex ratio in the milk-infected patients was 100 males to 220 females, and in the others 100 males to 108 females. As the proportion of males to females over the age of 15 in Folkestone at the census of 1901 was 100 to 151, the contrast between the incidence in the milk-infected group as compared with the other is striking. It is interesting that at Bournemouth, where the milk was apparently infective for about a month, and at Folkestone, where infection from a single source persisted for fourteen years, the incidence on adult females should correspond so closely.

Study of such data as are available suggests that, generally speaking, milk-borne infection falls more heavily on women and children, but there are so many exceptions on record that the observation is of little practical value when applied to the investigation of any given epidemic. Most of us will agree with Professor Picken's view that "this method of differentiating the cause of epidemics is in practice unreliable."—I am, etc.,

JOHN RITCHIE.

Dumfries, June 25.

[1] Johnstone, R. W. (1910). *Reports to the Local Government Board on Public Health and Medical Subjects*, New Series, No. 41.

Technique in Knee-joint Operations

SIR,—I was surprised to read Mr. A. S. Blundell Bankart's comments on the technique employed by Mr. Eric Lloyd in operations on the knee-joint (*Journal*, June 12, p. 1227). Bacteriological investigation has demonstrated that although the surface of the skin may be rendered sterile, the deeper layers may still harbour organisms. For many years it has been my practice to sterilize the deep layers of the skin incision by the direct application of iodine before proceeding with the operation, and many surgeons from foreign clinics have acknowledged the added safety which this ensures.

Surely surgeons do not believe that they eliminate the possibility of infection from the deeper layers of the skin by clipping towels over the edges? Does Mr. Bankart believe that although the towel becomes stained with blood no organism can pass? This question raises a practical point in technique which applies to all branches of surgery, and one which I had intended to make the subject of a special communication to the *Journal*. I am grateful to Mr. Eric Lloyd for referring to it in his address on "Technique in Operations on the Knee-joint."—I am, etc.,

NAUGHTON DUNN.

Birmingham, June 20.

When to Operate in Appendicitis

SIR,—I should be glad to know what is the general opinion of surgeons on the question of cases of inflamed appendix with abscess formation. To-day I sent a case of this type into hospital.

Briefly, the history, which varies little in these illnesses, is one of a six-day illness commencing with pain in the right iliac fossa six days ago. The patient had no gastric symptoms till the third day, when he was sick and continued so till a simple bismuth mixture allayed matters within twenty-four hours. His temperature began to rise, and varied between 99.8° and 100°; the bowels moved daily without any aperient. To-day, the sixth day, a palpable lump in the appendix area was evident; he had anorexia; the pain still remained as it had done, but the tenderness was much more marked. The diagnosis was obvious.

His wife came to see me four hours after his admission to hospital with the report that the surgeon had decided not to operate. I was surprised to hear this; and to placate her and to ensure that the patient's condition had been investigated I 'phoned the hospital and spoke to the medical officer

in charge of the wards. He agreed with the diagnosis, but said the custom in that hospital was to wait, leaving the question of operation to some future time, and meanwhile keeping a close eye on the patient's condition.

Of course, one of three things will happen: (1) Absorption of the inflammatory products with resultant adhesions. (2) A circumscribed abscess cavity with a gangrenous appendix floating in the products of its own decomposition. (3) Extension of the inflammatory process with peritonitis, followed by immediate and grave operation.

My reason for writing is to indicate that there are different schools of opinion on the correct procedure. I have known similar cases, sent to different hospitals, and still have vivid memories of the trenchant and almost libellous comments of two surgeons on the characters and qualifications of the doctors who had attended and delayed sending the patients into hospital. My own Edinburgh training was directed to early and immediate operation. It is not for me to go into the arguments pro and con in this matter. But in view of the evidently divergent opinions held I should like an authoritative statement as to what the majority of surgeons practise in these types of appendix cases.—I am, etc.,

Bedfont, Middlesex, June 24. J. HEPBURN.

"What is Osteopathy?"

SIR,—I am glad Dr. Kelman Macdonald has made it quite clear (*Journal*, June 19, p. 1284) that he and I do not agree as to the interpretation of osteopathic findings—that was my hope when I answered his letter. But I am in entire agreement with him when he says that "the physiological circulatory conditions prevailing around a joint and the pathological findings supervening in joint injury are facts which are not altered by what interpretation" I put on them or by what he reads into them. I have never at any time suggested otherwise, and it is difficult to understand why he elects to answer my letter with such an implication. I only claim that my interpretation is based on physiological and pathological findings which in the main are accepted by almost the entire scientific world, and his is based on osteopathic pathology, which is not.—I am, etc.,

London, W.1, June 22. MORTON SMART.

Ionization for Hay Fever

SIR,—Although feeling much sympathy for my friend Mr. Vlasto on his non-success in treatment of hay fever by zinc ionization, I am unable to explain it. The technique is simple for a rhinologist, although I can quite believe that electrotherapeutists who are not familiar with the anatomy of the nose might have many failures.

On the other hand, in ionization for suppurative otitis media the selection of cases and the technique are of the greatest importance. For attic cases with a tiny perforation the method is quite useless, whereas for cases in which the tympanum is accessible through a good-sized perforation in the lower part of the membrane zinc ionization with proper technique gives the most dramatic success.

With regard to my own experience of ionization for "hay fever," last year I treated seventeen private cases. Of these, two were done rather late in the season, and although they cleared up satisfactorily they might have been nearing the end of their seasonal misery; so I will not include them. Of the other fifteen, two were free from symptoms after one ionization, two were almost free; nine cases were nearly symptom-free after two ionizations, and were free after a third. One patient was very little better, and one showed no improvement. The results of my hospital cases were very similar.

In my experience zinc ionization gives better results than any other method. An objection to it is that it is an empirical treatment directed to the nose. We do not know how it acts. For tympanic sepsis, however, this treatment is not empirical. The ionization produces a coagulation necrosis of the organisms in the middle ear, and thus sterilizes the cavity. For this reason the applications of this treatment in the nose and ear should be carefully discriminated and their results not confused.

Vasomotor rhinitis does not yield many successes. One gets an occasional very pleasing cure from ionization, but not the high proportion of cures that one gets in hay fever.—I am, etc.,

Guildford, June 26. T. B. JOBSON.

SIR,—Mr. Michael Vlasto questions the value of ionization in hay fever. I think the chief value of zinc ionization of the nasal mucosa is to reduce the sensitiveness of the mucous membrane in all those complaints which give rise to paroxysmal sneezing, whether from hypersensitiveness to pollen or to any of the air-borne dusts, or from bacterial causes. At times this may be sufficient to relieve the symptoms. But in hay fever the whole of the patient, every square inch of skin, every drop of blood, is hypersensitive to the pollen and can be proved to be hypersensitive by the Prausnitz-Kustner reaction (passive transfer and the dermal reactions). This being so, it would seem fatuous to rely simply upon treatment of the nose in a complaint in which every cell of the body is sensitized.

In treating those afflicted by immoderate sneezing the first maxim is to discover the cause by the dermal reactions. Next, to desensitize the patient with the protein that may be at fault—pollen, horsehair, orris root, etc. If the nasal mucosa is inordinately sensitive to a probe and the sneezing reflex easily produced with redness of the eyes, then ionization or cauterization is of great value, always allowing that the possibility of the irritation being due to a microbic infection has been ruled out.—I am, etc.,

London, W.1, June 28. FRANK COKE.

SIR,—Mr. Vlasto, in his letter in the last issue of the *Journal*, asks whether others shared his experience with intranasal ionization for so-called hay fever.

In our special ionization clinic at the Chest Hospital, Margaret Street, over 800 patients have received treatment during the last three months, mainly for seasonal rhinitis. It is difficult to assess the relative proportions of cases which suffer from rhinorrhoea precipitated by pollen and those in which the rhinorrhoea is produced by other factors, such as metabolic disorders, climatic influences, psychopathic vasomotor disturbances, etc. In our experience a large proportion of the cases benefit from ionization. There is no doubt that the therapeutic effect of the ionization largely depends on the technique employed.

Twelve years' experience of this special type of treatment and the advantage of examining and observing such a large number of cases this season have enabled me to obtain improved results by modifying the technique. I intend as soon as possible to publish in detail the technique used at our clinic and to give complete statistical results of this treatment. I hope that others will do the same so that the value of this treatment can be satisfactorily assessed.—I am, etc.,

London, W.1, June 28. PHILIP FRANKLIN, F.R.C.S.

Animal Pathology: Puerperal Infection

SIR,—I was very pleased to read the letter of Dr. T. Hare on the subject of animal pathology in the *Journal* of June 12 (p. 1229). We must all hope with him that some day an institute of comparative pathology will be founded, where "the diseases of animals can be studied for the service of medicine," for until medicine works in closer co-operation with veterinary science and agriculture its progress will be slower than it need be. The further study of diseases in animals will undoubtedly throw light on the pathology of obscure diseases in man. I should like to state here an interesting problem bearing on this point.

Some time ago my fox terrier, aged 10, had her fourth or fifth litter of puppies; as we had another dog she was confined in her kennel inside the garage. After a difficult labour, in which I had to assist her, two pups were born dead, and one survived. The two dead pups were removed and buried, the placenta and debris swept out of the garage on to some grass outside. On the second day she was very ill, would not take her food, shivered, and was very restless and anxious to get out. The next day her condition was worse; she was weaker, would take no food, and her restlessness and anxiety to get out was so great that, in spite of her weakness, I decided to let her do so. To my astonishment she started searching in the grass outside the garage, and when she had found the placenta immediately ate it and then went straight back to her kennel. Next day she was much better, and in a few days quite well again.

Those are the facts of the case, and I was fortunate to be able to observe them so closely. It is well known that certain animals always eat the placenta immediately after birth, and farmers say the animals will not settle down properly until they have done so. It is also well known that other mammals do not eat the placenta; why is there this difference? I always presumed that the animal ate its placenta because it was there and looked like something to eat; but here was a dog whose placenta was removed, who was becoming very ill, and was making frantic efforts to get out with the sole object of consuming it, and who after doing so made a rapid recovery. The only conclusion I can come to is that the placenta contains something which is vitally necessary to the animal at that particular time, while those animals which do not eat it absorb *in utero* the necessary substances, which are probably in the nature of antibodies or antitoxins to streptococcal infections.

If this is so it will help to elucidate the puzzling problem of puerperal infections in women. As is well known there are two types of parturient women, those who show no sign of puerperal infection whatever the environment or operative intervention and those who develop puerperal fever under the very best possible conditions and even when no vaginal examinations are made. It is important to remember that in subsequent confinements under precisely similar conditions the results may be reversed, and so this can only be due to some state in the woman herself. The whole question is, What gives immunity or lack of it?

My idea is that most women, in the last few weeks of pregnancy, absorb certain substances from the placenta which are antitoxins. In other women, or in the same woman at another time, there is failure to absorb these substances in sufficient quantities, and so they become an easy prey to infection. These "non-protected" patients require injections of placental extract during the last two or three weeks before the confinement to replace this deficiency. This suggestion has been strengthened by the reports that recently, both in England and America, placental extract has been used to immunize children against measles and scarlet fever.

The only other question that arises is whether it is possible to tell definitely in the last few weeks of pregnancy whether a woman has this "protection" or not. I suggest the application of the Dick test; if a positive reaction occurs showing there is no antitoxin circulating in the blood the injection of placental extract should begin at once, and should continue until the test becomes negative, or even during the first week of the puerperium.

Perhaps Dr. Hare would be able to carry out experiments to confirm or disprove these ideas at the Research Laboratories of the Veterinary College. I should be extremely interested to hear the results of any such investigation.—I am, etc.,

Isle of Anglesey, June 21. J. L. MOIR.

Maternal Mortality and Sepsis

SIR,—I am sorry for Sir Kingsley Wood. In your leading article of June 19 you suggest that the Minister has offered only the second best where the best is called for. He has had to depend on his medical officers, who by direction have furnished him with a report on an investigation into maternal mortality. I can only imagine Sir Kingsley Wood's feelings when he finds that report differing little in essential recommendations from many which have gone before it.

The most important factor concerned in the maternal death rate is septic infection. I will limit my remarks to this one cause. A crop of excuses has sprung up lately to account for the sustained high incidence in mortality rates. The latest refers to the alleged increase in the number of miscarriages. Why are they so prone to become septic? I surmise that most of them are performed by persons who understand the risk they run when a case goes wrong and they are well acquainted with modern methods of asepsis. Surely there must be something wrong with the modern method.

Other excuses are set out in detail, such as inadequate training, insufficient ante-natal care, and, best of all, the lack of the advice and direction of specialists. When we know that the worst figures are supplied from institutions in which specialists walk which way can we turn? Again, I have heard specialists of high standing discount the claims of slums for proverbial immunity. As the figures from these quarters, or rather the registered births, are included in the domiciliary class, I am not convinced that the immunity does not exist; in fact, I believe that the immunity of the slum woman is due to her immunity from interference by a medical attendant. When we read of the Aberdeen report commending a maternity organization in which midwives should conduct all normal deliveries, I feel that I am in good company. As this recommendation struck a severe blow at family practice, it has been toned down somewhat in the latest reports, and no wonder. To me it is the greatest declaration of defeat and failure that I have known the medical profession to make.

Now let me shed a little light. In the Prefatory Note to the latest report to the Minister of Health by the Chief Medical Officer, figures are quoted from the old Edinburgh Maternity Hospital (1823-44) showing a mortality of 19 per 1,000 due mainly to puerperal sepsis. How we have improved! I will quote some figures too. The figures I quote refer not to a mere 3,906 deliveries, but to upwards of 10,000 recorded by Collins about one

hundred years earlier, in which there was a mortality of 0.53 per cent., *not one of which was due to sepsis.* Collins painted the walls, floors and bedsteads, and soaked the linen, his hands and instruments with a solution of chloride of lime. Hence the miracle. He was thus the first obstetrician to use the antiseptic method, and crude as it was it was effective. Need I declare myself a disciple of Lister? So I can boast that sepsis has no terrors for me. And so I repeat, I am sorry for Sir Kingsley Wood. —I am, etc.,

A. C. F. HALFORD, M.D., F.R.A.C.S.

London, June 24.

The Second Best—in Housing

SIR,—I was glad to see your criticism of the policies pursued by the Ministry of Health in the various spheres of housing, maternity, ophthalmic benefit, clinics, and occupation—all subjects of vital national concern in which all general medical practitioners must be interested. My only criticism is that the Ministry is "let off" too mildly. The mere presentation of figures does not reveal the truth. The history of the National Government's actions in regard to the housing problem is one of lamentable failure. In 1931 it cut down housing expenditure. In 1932 the Wheatley subsidy was stopped, and in 1933 it discouraged building even without a subsidy. In 1933 the Rent Restriction Act abolished rent control of middle-class housing, and so there was a rush of speculative builders. This Act fixed 1938 for the rent control of workers' houses. In 1934 the Government guaranteed part of the mortgages for building by private enterprise and the rich building societies! Thus it made a new situation profitable to profiteers in spite of the fact that the Minister of Health (Sir Hilton Young, now Lord Kennet) admitted the fact known to all that there was a great shortage of houses *to let* for the lower-paid workers. This gave expansion to the less satisfactory building by speculative builders for the middle classes as that for the lower-paid workers became less a commercial proposition. Public discontent at this policy forced the Government to do something, and that something showed no vision—namely, the Housing Act of 1935, or as some people have termed it the "overcrowding" Act! The main points of this Act are that it defines "overcrowding," compels a survey *on the definition;* after January 1, 1937, makes "overcrowding" (as defined) an offence; reintroduces a subsidy; and, mark, alters the basis of compensation to land and property owners. The definition of "overcrowding" is the weakest link and *real* overcrowding slips through it. The definition sets up no standard of *separate* living accommodation, which the London survey, the Merseyside survey, or the census of 1931 adopted. The result is that the severe (or real) overcrowding is untouched by the Act, and the so-called figures presented as to its existence and amelioration are mere eye-wash. Many anomalies as to the constitution of a family in a given area making for "overcrowding" could be given. Children under 10 years are counted half an adult and those under 1 year are not counted at all. The overcrowding survey of England and Wales revealed 341,554 families being "overcrowded" by the definition in the Act, 283,844 on the verge of it, and 623,429 families who escape the definition by *half a unit!* Yet the Minister of Health wants to know why some women won't have babies. The general practitioner could give him the correct reply.—I am, etc.,

Ilford, June 21. A. G. NEWELL, M.D., D.P.H.

Courses in Individual Psychology

SIR,—As a consequence of the sudden death of Professor Adler at Aberdeen on May 28 it has become necessary to remodel the programme of lectures and vacation courses in individual psychology arranged for this summer.

Dr. Alexandra Adler, Professor Adler's daughter and herself a brilliant exponent of individual psychology, has very courageously undertaken to carry out, as far as possible, the programme arranged for her father. Certain adjustments and cancellations have, however, been necessary. The programme is now as follows: lecture course, non-resident, in the British Medical Association Hall, Edinburgh, June 21 to July 2; vacation course at University Hall, Liverpool, July 7 to 12; vacation course at Bishop Otter College, Chichester, Sussex, July 17 to 26.

We, the undersigned, being convinced of the great value of individual psychology in throwing light on the fundamental problems of human life in an age of great perplexity, would appeal to the medical and teaching professions, and the Church and parents especially for as large a measure of support as possible for these courses. This would be the finest tribute that could be paid to the memory of a great benefactor of the human race, who devoted his life to freeing men and women from the burdens of misconception and misunderstanding which lie so heavily upon the human family.

We wish to take this opportunity of thanking the University and City of Aberdeen for having done everything in their power to honour the memory of Professor Adler by arranging an official funeral service in the chapel of King's College on June 2.—We are, etc.,

NINA HAMILTON AND BRANDON.
ALBERT LIVERPOOL.
ISABEL MARGESSON.
ALFRED BEIT.
PHYLLIS BOTTOME.
IAN L. FLEMING.
ELIZABETH HOARE,
Chairman, Adler Vacation Courses.

London, W.8, June 21.

Pulmonary Embolism in an Infant

SIR,—The following notes on a case of pulmonary embolism in an infant of 7 months may be worthy of publication, since this condition is rarely found under the age of 20.

A healthy child aged 7 months was admitted to the Peterborough and District Memorial Hospital on May 26, 1937, under the care of Dr. E. A. Holmes, for the radical cure of a right inguinal hernia, and the operation was performed under ether on the following day.

The wound healed well, and subsequent progress was satisfactory until the ninth day after operation, when the temperature at 5 p.m. was found to be 103° F., with a pulse rate of 130, although the patient otherwise appeared comfortable. At 9.15 that evening he suddenly became very collapsed and cyanosed, with distressing dyspnoea. Respirations were 70 a minute, and the pulse was almost imperceptible. The child's colour improved with the administration of oxygen and stimulants, but the orthopnoea continued, and death occurred in about forty minutes. At the necropsy a long coiled thrombus occupying the left branch of the pulmonary artery was found.

I am indebted to Dr. Holmes for permission to record this case.—I am, etc.,

H. W. CHADFIELD, M.R.C.S.

Peterborough and District Memorial Hospital, June 14.

Medico-Legal

ATTACK BY MENTAL DEFECTIVE

We noted in these columns (May 1, p. 944) the hearing of an appeal against an application by Mrs. Bertha Holgate and her husband, William Rennie Holgate, for leave to bring an action against the Lancashire Mental Hospitals Board, and Dr. F. A. Gill, the superintendent, and Dr. G. S. Robinson, the deputy superintendent, of the Calderstones Institution, a home for mental defectives maintained by the Board. The court gave permission, its decision was upheld on appeal, and the action was tried at Liverpool Assizes on June 10 before Mr. Justice Lewis and a jury.

The facts were not in dispute: a moral defective named John Lawson had been several times convicted of criminal violence, and had for some years been confined at Rampton, a State institution. He was transferred to Calderstones as considerably improved, and after a time was released on licence under the personal supervision of his brother. The licence was signed by the deputy superintendent with the consent of two members of the committee of management, and was renewed. While out on his second period he called at the home of the Holgates, and when Mrs. Holgate had her back to him he attacked her savagely with a billet of wood, inflicting very severe injuries on her. He was convicted at the assizes and sent to a criminal lunatic asylum.[1] Mrs. Holgate and her husband brought an action against the Joint Board and the medical men for negligence in licensing Lawson. Mr. Thomas Burke, a member of the Board, said that when the managing committee had agreed to license Lawson, the patient's brother had assured them that he would have Lawson under his personal supervision. Lawson's condition had improved so far, and he had shown no violent tendencies for so long, that it was considered safe to allow him out for a month. There was in any case nothing to prevent an inmate of Calderstones from walking out of the grounds. Miss M. L. K. Jones, another member of the committee, said that she had been present when the committee renewed Lawson's licence for his second period of absence on the assurance that his conduct during the first period had been satisfactory. Cross-examined, she said that she had not known that Lawson had been convicted of a series of savage and criminal offences. When the licence had been renewed the committee had not had his dossier before them, but it would have been before the committee when it originally granted leave of absence.

Dr. Gill said that he had left Dr. Robertson in charge while he was on official leave. He knew that Lawson's brother was a respectable working man, but had not appreciated that the house was only in charge of a daughter during the day. Dr. Robertson said that at the time he signed the certificates for Lawson's leave he believed that to do so was quite safe. It was his duty, according to the terms of his appointment, to sign the certificates. To give mental defectives on licence official supervision would be a tremendous task. Dr. Gill had never been consulted about Lawson's leave. The jury found that the Joint Board and both medical officers had been guilty of negligence in allowing Lawson to go out on licence, and awarded Mr. Holgate £708, including £208 out-of-pocket expenses, and Mrs. Holgate £3,500.

From the reports in the *Times* and the *Liverpool Daily Post*, to which we are indebted for the foregoing account of the hearing, it appears that Dr. Robertson, while acting as superintendent in Dr. Gill's place and with the consent of two members of the responsible committee, licensed Lawson to go out under supervision, for the efficacy of which he had only the word of Lawson's brother, knowing Lawson's record and mental constitution. Accommodation in mental institutions is very limited, and every local authority naturally wishes to let out on licence as many patients as it safely can. The judgement of its officers is very rarely at fault. Sir Patrick Hastings, K.C., who conducted the case for Mr. and Mrs. Holgate, maintained that only the superintendent could sign a licence, and that Dr. Robertson could not do so in his place. As this point was not specifically dealt with in the jury's finding it remains undecided, but as a matter of practice an institution would be in an impossible position if it were not permitted to appoint an officer to act as superintendent during the substantive superintendent's period of leave. The finding seems to have been very hard on Dr. Gill, for he was apparently never consulted about Lawson's leave and did not even know that the licence had been extended, though he granted it originally. As Dr. Gill collapsed while giving evidence, and was not therefore able to complete his testimony, certain aspects of his responsibility could not be properly investigated by Sir Patrick Hastings. The case, however, seems to fall into the category in which *res ipsa loquitur*—the event speaks for itself. It is settled law that if a thing in the keeping of A causes damage to the person or property of another in circumstances which suggest negligence unless they are explained away, A will have to pay damages unless he can give a satisfactory explanation. The jury here were not satisfied that the Board and its medical officers had done their best to ensure that Lawson could be safely let out. In future committees managing institutions for mental defectives and persons of unsound mind will have to realize that they license at their peril patients with a record of violent conduct.

[1] *British Medical Journal*, 1936, **2**, 1010.

DENTAL PRACTICE BY MEDICAL MEN

When dental practice was regulated by the Dentists Act, 1921, the right of medical men to practise all kinds of medicine and surgery was preserved by Section 1 (3) (*a*), which lays down that nothing in the section shall prevent the practice of dentistry by a registered medical practitioner. A number of doctors, though probably not very many, practise dentistry by virtue of their medical qualifications, though they are not on the *Dentists Register*. They may be surprised to learn that, though there is nothing in law to prevent them practising dentistry, they are not recognized as dentists under the National Health Insurance Acts, and cannot receive pay for dental services to insured persons under the Acts and Regulations.

This rule was settled by Mr. Justice Simonds in the Chancery Division on June 18, in an action in which Dr. C. A. Bynoe asked him to grant an injunction against the General Federation of Trade Unions Approved Society to prevent them from writing or saying that he was not entitled to give dental services and receive payment under the National Health Insurance Acts, 1924–8, or the Dental Benefit Regulations, 1930, Art. 21 (1). Dr. Bynoe, who is on the *Medical Register* but not on the *Dentists Register*, treated a member of this approved society in February, 1935, and sent in a dental letter with an account for £1 12s. 6d. The society did not pay this amount, but on February 6, 1935, wrote to the patient saying that they had received the estimate but were unable to pay the charges or deal with the dental letter as Dr. Bynoe's name was not on the *Dentists Register*; they suggested that the patient should obtain an estimate from another dentist. Dr. Bynoe maintained that they implied by these words that he was not qualified to give dental services or to receive payment for them from the society.

The learned judge explained in his judgement that the National Health Insurance Act, 1924, s. 75, allowed societies to distribute additional benefit when they had a certified disposable surplus. The amending Act of 1928, s. 16 (3) allows regulations to be made for the administration of schemes provided that they do not restrict the right of any insured person to obtain treatment from any practitioner with whom the society has made arrangements. The Dental Benefit Regulations, 1930, Art. 2, define "dentist" as a person on the *Dentists Register*. Art. 21 provides that a member can obtain dental treatment from any dentist who is prepared to provide it for a certain fee. The learned judge therefore found it

quite clear that Dr. Bynoe was not entitled to give treatment under the regulations and receive payment from the approved society for it, for he was not a person with whom arrangements had been made to give such treatment in accordance with the regulations. He remarked that, while there might be persons who, though not on the *Dentists Register*, were quite competent to give dental treatment, he could quite understand the Minister of Health confining the right to give dental treatment under the Acts to persons on the *Dentists Register*.

ACKNOWLEDGEMENT BY SIGNAL

A testator may validly execute a will by directing someone else to sign it in his presence. The law requires, however, that the testator shall "acknowledge" the signature—that is, shall do something to show the witnesses that he understands that the other person is signing for him. When the will is proved the court will ask for evidence that the signature was made in the presence of the testator and by his direction and that he acknowledged it. The acknowledgement need not even be verbal, and sometimes indeed a patient near death is too weak to speak. He may then indicate his acknowledgement by any sign so long as its meaning is unmistakable. Recently the President of the Probate Division, Sir F. Boyd Merriman, pronounced for the will of a woman whose doctor signed it for her in the presence of witnesses. She had almost lost the use of her right hand, and at her request the doctor read out the contents of the will to her and asked her to squeeze his hand if she approved it and wanted him to sign it on her behalf. She squeezed his hand accordingly and two witnesses attested the signature. She died about three weeks later. The short report, for which we are indebted to the *Times* of June 22, does not state why the testatrix did not acknowledge the signature verbally. At all events the action for probate was undefended and the validity of the acknowledgement was not questioned.

Obituary

We regret to record the death on June 19 in London of Dr. MURDOCH MACKINNON, formerly of Nairobi, after two days' illness. Dr. MacKinnon received his medical education in Edinburgh and King's College, London. He graduated M.B., Ch.B.Ed. in 1905, and proceeded M.D. three years later. In 1911, after serving as casualty physician at St. Mary's Hospital, he obtained the diploma D.P.H.Oxon. He had conducted a private practice in Nairobi, Kenya Colony, for twenty-two years, and had been medical officer to the Government school for eighteen years. He took advantage of the facilities for research thus made available to him, and in 1923 published in the *Journal of Tropical Medicine and Hygiene* an account of the influence of education on the physical and mental development of European children in the highlands of Kenya; this attracted considerable attention in view of the practical questions involved and of the value of the statistical comparison he made between children educated at home and abroad. Another article by him was published in 1929 in the *Kenya and East African Medical Journal*, and dealt with rheumatic fever and chorea in that country. Dr. MacKinnon joined the British Medical Association in 1909, and was president of the Kenya Branch in 1926–7 and again in 1935. In the last-named year he returned to England, and had latterly been in practice at Twickenham.

The death occurred at Alloa on June 21 of Dr. TUACH MACKENZIE, who had just retired from the post of physician-superintendent of Dundee Mental Hospital. William Tuach Mackenzie was born in Ross-shire in 1871, and after taking a medical course at Aberdeen University graduated M.B., Ch.B. in 1898, proceeding to the degree of M.D. in 1903, when he submitted a thesis on acromegaly. After holding resident posts in the Aberdeen Royal Infirmary and the Rotunda Hospital, Dublin, he was appointed to the charge of pauper lunatics in Giggleswick Union, West Riding, Yorkshire. In 1899 he was appointed deputy-superintendent of Dundee Mental Hospital, and four years later succeeded the late Dr. James Rorie as physician-superintendent of this institution, a post which he held until shortly before his death. He was also lecturer in mental diseases at St. Andrews University, and was a member of the British Medical Association and of the Royal Medico-Psychological Association. In his earlier days Dr. Tuach Mackenzie took much interest in athletics, having been as a student a member of the Aberdeen University XV and swimming champion of the University for three successive years. He was also a member of the Royal and Ancient Golf Club, St. Andrews, for twenty years. He joined the British Medical Association nearly twenty-five years ago.

In the death of PAUL IEUAN WATKIN, M.A., M.R.C.S., L.R.C.P., on June 20, the Stratford Division of the British Medical Association has lost a consistent and tireless worker, an inspiring personality, and a true friend. Graduating from Christ Church, Oxford, he became lecturer in physics at St. Thomas's Hospital, later proceeding to his medical diplomas, for which he studied at the London Hospital. Some thirty years ago he settled in practice in Canning Town, and worked there steadily till his death, becoming a figure well beloved in all his professional and social work. Professionally Dr. Watkin's chief interest was in dermatology; this found expression in his devoted work at St. Mary's Hospital, Plaistow, where he became physician in charge of the skin department. Socially his interests were profound and varied. In his undergraduate days at Oxford he became a resident at the Mansfield House Settlement, beginning thus an active association which lasted till his death. From 1915 onwards he represented the West Ham Borough Council on the West Ham Insurance Committee, and later was a co-opted member of the maternity and child welfare committee of the council. For many years a member of the Executive Committee of the Stratford Division, he became chairman of the Division for two years, starting in 1933. His participation in local affairs of the Association was regular, persistent, and always valuable. Broad in outlook and culture, jovial yet severe and well-balanced, kindly to all whatever their standing, Paul Watkin was one of our "elder statesmen." He can receive no higher tribute than that paid by a doctor-patient of his to the writer when he heard of this death: "Well, one of the landmarks of West Ham has gone."

The Rochdale Division of the British Medical Association has sustained a great loss by the death of Dr. SAMUEL WILSON, chairman of the Division 1936–7. To the deep regret of the members illness prevented Wilson from presiding over meetings of the Division after July of last year. In September he was compelled to relinquish his work, and he died on May 29 in an ambulance while on his way home to Rochdale from his seaside bungalow in North Wales, where he had been staying for some time. Wilson was born at Maybole, Ayrshire, and was a student at Glasgow University, taking the degrees of M.A. and, in 1907, M.B., Ch.B. He held resident posts at Belvedere and Ruchill Fever Hospitals, Glasgow, and in 1908 came as house-surgeon to Rochdale Infirmary. After holding this post for about eighteen months he became assistant to Dr. Wallace of Rochdale, taking the practice over shortly afterwards on the retirement of his principal. For over a quarter of a century he carried on a very large private and panel practice single-handed, except for a period of three years from 1923, when a nephew assisted him. The numbers on his panel kept at the maximum

figure! Consequently Wilson's leisure time was scanty. When work permitted he enjoyed a game of golf, usually with his lifelong friend and colleague, the present chairman of the Division. Their encounters on the Rochdale links during the last twenty-five years have become part of the history (and legend) of the club. Wilson's other relaxation was reading—philosophy, biography, and the classics being his choice. In the enjoyment of his books he stole many hours from the night. At the funeral service at Rochdale Parish Church and the burial at Rochdale Cemetery on June 2 a large number of his patients and medical colleagues gathered to show their affection and regard. Dr. Wilson is survived by a widow, two daughters, and two sons: both the latter are medical students.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on June 24 the degree of Bachelor of Medicine (B.M.) was conferred on N. H. Martin.

UNIVERSITY OF CAMBRIDGE

At a congregation held on June 22 the following medical degrees were conferred:

M.B., B.CHIR.—W. H. Phillipps, *C. N. Pulvertaft, N. T. Holden, J. A. Seymour-Jones.

M.B.—R. C. F. Catterall, G. N. St. J. Hallett, A. R. Pope, M. S. M. Rayner, C. J. F. Coombs, *H. W. Sadlier, *K M. Mayall.

* By proxy.

The following candidates have been approved at the examinations indicated:

THIRD M.B.—*Part I (Surgery, Midwifery, and Gynaecology):* E. W. O. Adkins, G. E. Adkins, R. F. Ashwin, T. M. Banham, C. F. Barwell, P. F. Barwood, R. D. D. Birdwood, A. W. Box, E. E. Bullock, J. F. H. Bulman, G. A. Burfield, O. J. Curl, J. K. Denham, R. C. S. Dick, H. G. Dowler, H. L. Ellis, T. J. Fairbank, A. L. Fawdry, N. Feiwel, A. Garcés, E. A. G. Goldie, A. C. F. Green, J. L. Griffith, J. E. Hardwick-Smith, S. W. G. Hargrove, N. J. P. Hewlings, J. H. S. Hopkins, R. T. Johnson, J. S. Joly, H. S. Kellett, P. Kelly, A. Leese, P. F. Malim, R. W. Mason, J. H. Moir, W. E. D. Moore, K. S. Mullard, W. A. Nicholson, A. P. Norman, W. E. Owens, G. R. C. Peatfield, P. A. T. Phibbs, E. H. D. Phillips C. G. Rob, D. Rubin, G. Sheers, J. F. Stokes, D. C. Sturdy, D. J. D. Torrens, R. L. Townsend, S. C. Truelove, W. B. Waterfall, P. H. Willcox, J. M. G. Wilson, P. R. Wilson, D. E. Yarrow, M. D. Young. *Women:* V. E. A. Sykes. *Part II (Principles and Practice of Physic, Pathology, and Pharmacology):* C. D. Anderson, R. A. Andrews, R. F. Ashwin, E. F. Aubert, J. L. W. Ball, T. M. Banham, R. C. B. Barbor, P. F. Barwood, I. G. Braddon, H. A. Brook, J. F. H. Bulman, C. T. A. Burgess, L. H. Cane, N. F. Coghill, J. O. Collin, F. S. Cosh, F. M. Crawshaw, A. C. Cunliffe, R. C. S. Dick, C. M. Dickins, H. G. Dowler, R. Edwards, W. H. Ekin, E. A. Evans, E. M. Evans, N. Feiwel, J. N. Fell, C. H. C. Ferguson, G. M. Fleming, E. B. French, J. C. Gilson, C. E. D. H. Goodhart, I. C. A. D. P. Graham, I. A. Guest, H. Haigh, S. G. Hamilton, J. N. Horne, W. H. R. Jeremy, J. S. Joly, P. Kidd, A. B. Lintott, T. P. H. McKelvey, R. W. Markham, J. H. Moir, M. D. Molesworth, C. R. Morison, W. G. Murray-Browne, T. P. Myles, R. C. Neville, L. B. Paling, A. K. Pardhy, M. T. Parker, E. A. Pask, J. P. Reidy, G. O. Richardson, C. G. Scorer, C. J. S. Sergel, K. M. M. Sheldon, J. P. Singer, R. M. Solomon, R. S. Stevens, A. W. Stewart, J. F. Stokes, R. F. Tredgold, W. B. Waterfall, R. W. Watts, D. O. Wharton, B. D. Whitworth, E. H. L. Wigram, L. A. C. Wood, H. R. Wynne, G. E. Yardley. *Women:* M. B. Billington, G. M. S. Caldwell, A. C. Clark, C. E. Peaker.

UNIVERSITY OF LONDON

At a meeting of the Senate held on June 23, with the Vice-Chancellor, Mr. H. L. Eason, M.D., M.S., in the chair, Sir Robert Pickard, D.Sc., F.R.S., was elected Vice-Chancellor for the remainder of the year 1936-7 and for 1937-8. A cordial vote of thanks was passed to Mr. Eason for the great services he has rendered to the University during his tenure of the office of Vice-Chancellor. Mr. Eason took up his duties as Principal of the University on July 1.

Professor L. S. Dudgeon, F.R.C.P., has been appointed as from July 1 a representative of the General Medical Schools on the Senate for the remainder of the period 1934-8.

Sir Ernest Graham-Little, M.P., M.D., has been re-elected a member of the University Court for a further term of five years from October, 1937.

UNIVERSITY OF MANCHESTER

The Vice-Chancellor, Professor J. S. B. Stopford, M.D., F.R.S., has intimated to Senate and Council his desire to be relieved of the duties of the chair of anatomy, in view of the increasing responsibilities of his administrative work, and Mr. Frederic Wood Jones, D.Sc., F.R.C.S., F.R.S., at present professor of anatomy in the University of Melbourne, has accepted an invitation to the chair in succession to Professor Stopford, and will take up his duties in January, 1938.

UNIVERSITY OF WALES

WELSH NATIONAL SCHOOL OF MEDICINE

The following candidates for the degrees of M.B., Ch.B. have satisfied the examiners in the subjects indicated:

OBSTETRICS AND GYNAECOLOGY.—D. W. Abse, S. W. Beswick, Alice Davies, Miriam E. Davies, D. G. Evans, W. G. Miles, A. H. Millard, Mary D. Owen, W. L. Ll. Rees, R. Tipple, Emily K. Williams, Mary Williams.

UNIVERSITY OF GLASGOW

At a ceremony of graduation held on June 25 the following degrees were conferred:

M.D.—E. D. Cooper (with honours), S. Lazurus (with high commendation), A. Dick.

PH.D.—D. Matta, M.B., Ch.B. (*in absentia*).

M.B., CH.B.—A. M. Thomson.

The Asher Asher Gold Medal in Laryngology and Rhinology was awarded to D. Christison.

The Services

HONORARY PHYSICIAN TO THE KING

Lieutenant-Colonel A. G. Biggam, O.B.E., R.A.M.C., has been appointed Honorary Physician to the King and promoted to Brevet Colonel, vice Colonel J. Heatly-Spencer, C.B.E., late R.A.M.C., who has retired.

VOLUNTARY AID DETACHMENTS

The latest official returns of the progress made in the organization of Voluntary Aid Detachments show that 154 men's and 1,060 women's detachments, comprising a total membership of 30,942, have received recognition by the War Office. During the past year there has been an increase of 39 detachments and 1,673 members. Of the present membership 6,832 have undertaken the "mobile" obligation.

The county areas in England which have a total membership of 500 or over are: County of London, 1,785; East Lancashire, 1,761; Norfolk, 1,489; Hampshire, 1,278; Yorkshire (West Riding), 1,155; Surrey, 1,110; Devonshire, 1,030; Sussex, 1,005; Somerset, 982; West Lancashire, 976; Cheshire, 974; Essex, 865; Kent, 759; Yorkshire (North Riding), 713; Gloucestershire, 551; Nottinghamshire, 525; Lincolnshire, 519; Staffordshire, 500.

In Scotland there are 160 detachments, with a total membership of 4,132, of whom 1,091 are "mobile" members. There are 75 detachments in Wales, the total membership being 1,704, of whom 340 are "mobile" members.

The present scheme for Voluntary Aid Detachments was inaugurated in 1923, and is designed to supplement the medical services of the Naval, Military, and Air Forces in time of war. "Mobile" members are required to give an undertaking that, in the event of the embodiment of the Territorial Army, they are prepared to serve with the medical services either at home or abroad. "Immobile" members undertake to serve within reach of their own homes.

Medical Notes in Parliament

In the House of Lords on June 28 the Methylated Spirits (Scotland) Bill was read the third time, and the Factories Bill, which has had a first reading on June 22, was read a second time. On June 29 the Physical Training and Recreation Bill was read a second time after a discussion in which Viscount Dawson of Penn joined.

The House of Commons this week considered the Finance Bill and the proposed increase in the Exchange Equalization Fund. On June 22 it gave a third reading to the Factories Bill. The Children and Young Persons (Scotland) Bill passed through the committee of the House without amendment on June 23 and was read a third time. It had already passed the House of Lords. On June 28 the Hydrogen Cyanide (Fumigation) Bill was read a second time.

In the Commons on June 29 a financial resolution, upon which the Bill containing the Government's agricultural proposals will be founded, was agreed to in committee. Mr. W. S. Morrison, in explaining the proposals, dealt with the attack to be made on disease in animals and poultry, and said that a centralized veterinary service for the whole of Great Britain would be created.

A meeting of the Parliamentary Medical Committee was summoned for July 1.

Drainage of Trade Premises

A Standing Committee of the House of Commons considered on two nights the Public Health (Drainage) of Trade Premises Bill. Mr. BERNAYS (Parliamentary Secretary to the Ministry of Health) moved to insert a provision in Clause 1 to maintain that part of the existing law which prohibits the discharge of petroleum spirit and calcium carbide into a public sewer. The committee agreed to the amendment.

On Clause 2 (Special Restriction on Discharge of Trade Effluent) Mr. ARTHUR REED moved that the word "stating" be used instead of the word "specifying" in the obligation on all factories to give to the local authority information on their effluents. Sir KINGSLEY WOOD said he appreciated that in some cases it might be difficult to specify the exact chemical composition of a trade effluent. As long as the local authorities had a general indication they would be able to carry out their duties under the Act. He was prepared to accept the amendment, which was then agreed to.

Mr. QUIBELL said the Bill empowered local authorities to prevent certain trade effluents from going into the sewers. He wished to know what a trade should do with such an effluent. Some local authorities would not allow a pit into which oil or petrol had been emptied to be connected with the sewer. In such a case the trader tipped the liquid out of a pit and it finally found its way into a gulley and thence into the sewer. Sir KINGSLEY WOOD said machinery would be provided under the Bill which would enable the local authority to require that before a trade effluent entered the sewer there should be eliminated any such constituent thereof as might be specified in the by-laws. A general code would be secured which would apply all over the country.

On Clause 4 (Exemption) Mr. H. G. WILLIAMS moved a long amendment dealing with premises where a drain or sewer communicating with the public sewer or cesspool had been provided with a new drain or sewer in lieu thereof. Mr. Williams said the amendment would provide that the rights that the trader possessed in the old drain should be given him in the new one. The amendment would deal with the quantity of effluent which the trader might wish to carry to his treatment plant. Sir KINGSLEY WOOD said he had no criticism to make of the amendment, and the committee agreed to it.

Sir KINGSLEY WOOD moved to provide that the consent of a local authority to the discharge into a sewer of any liquid produced solely in the course of laundering articles should not be necessary for the purpose of the Act. He said this did not exempt liquids produced in the course of cleaning or dyeing. The committee agreed to the amendment. Sir Kingsley refused, however, to accept an amendment moved by Mr. Morgan which proposed to exempt the discharge into a sewer of any liquid produced in the course of washing down a slaughterhouse, and Mr. Morgan withdrew the amendment.

Consideration of the Bill was completed and it was reported to the House.

Factories Bill

The report stage of the Factories Bill began in the House of Commons on June 15 with consideration of new clauses. Sir SAMUEL HOARE moved a new clause dealing with washing facilities. He said that under the present Factory Act facilities were provided only in trades and industries which were liable to special dangers. The Bill, as introduced, had proposed to extend these requirements to trades in which there might be a large amount of dirt and dust. In committee on the Bill members of all parties thought the scope was too narrow and the Government gave an undertaking that a new clause would be introduced. The House would see that under the clause which he now moved facilities would be provided where they were needed and could be reasonably supplied.

Mr. RHYS DAVIES pointed out that these facilities under the new clause were to be provided "in any factory where any employed persons are accustomed to take their meals at the factories." He wished the Government was not so timid. After further discussion and an appeal by several members that the new clause should be withdrawn for reconsideration, Mr. MESSER spoke of the dirty hands of French polishers, which could not be washed clean with soap and water. In that industry dermatitis resulted from the use of turpentine, etc., and a man who had dermatitis might wash in the same bowl as other men, and possibly spread the disease. In some places the workers washed their hands in methylated spirit to get rid of the polish, which was not a good thing. Sir SAMUEL HOARE said he would consider that point, and undertook to redraft the clause on more general lines. The clause was withdrawn.

A new clause, dealing with accommodation for clothing not worn during working hours and the provision of arrangements for drying such clothing was read a second time.

PROTECTION OF THE EYES

Mr. GEOFFREY LLOYD moved a new clause (Protection of eyes in certain processes), which ran:

> "In the case of any such process as may be specified by regulations of the Secretary of State, being a process which involves a special risk of injury to the eyes from particles or fragments thrown off in the course of the process, suitable goggles or effective screens shall be provided to protect the eyes of the persons employed in the process."

Mr. SHORT hoped the Home Secretary would ensure that employers saw their workmen used these necessary defences. Mr. MCLAREN said that in industries where men sweated the goggles became corroded, and when these goggles fitted badly across the bridge of the nose serious inflammation might occur. It was not enough to provide suitable goggles; the individual must be suited. Mr. LLOYD replied that the fitting of goggles was important, but screens would be prescribed wherever possible. The clause was read a second time.

Mr. BANFIELD moved a new clause to prohibit night work in bakehouses. He said Great Britain was the only country which had not abolished night baking. Sir SAMUEL HOARE said the Committee on Night Baking had not issued its report and he was not in a position to make a statement for or against the case which Mr. Banfield had put. When the report was received the Government would at once give attention to it and decide what action, if any, it should take. The proposed new clause was defeated by 228 to 125.

Colonel SANDEMAN ALLEN moved a new clause authorizing a variation of the hours to be worked in laundries. The clause was carried by 200 to 117 and was added to the Bill.

OVERCROWDING AND VENTILATION

The House then proceeded to consider the clauses of the Bill as received from standing committee. On Clause 1 (Cleanliness) Mr. RHYS DAVIES moved to provide that the weekly cleaning of the floor of every workroom should be done at a time (if any) when work was not going on in the workroom. Mr. GARRO JONES said that unless sweeping was done hygienically it was more menacing to the health of the workers than neglect of any sweeping at all. The amendment was withdrawn and a technical amendment dealing with Clause 2 (Overcrowding) was added to the Bill.

The House agreed to an amendment proposed by Sir SAMUEL HOARE, who explained that in the Bill as amended by it inspectors were authorized to insist on mechanical ventilation at once in cases where that was needed; secondly, after a period of five years mechanical ventilation would be generally compulsory; and, thirdly, the concessions allowed for existing factories in the same occupation were to be subject to a definite time limit of ten years. Mr. LLOYD put forward an amendment authorizing the chief inspector to accept in the subsection any workroom in which explosive materials were manufactured or handled. The amendment was carried after discussion by 228 to 112 and the House adjourned.

On resumption of the debate on June 16 the House accepted an amendment moved by Colonel SANDEMAN ALLEN to Clause 2 (Overcrowding). This amendment provided that where a room contained a gallery, the gallery should be treated for the purposes of this section as if it were partitioned off from the remainder and formed a separate room. An amendment by Mr. RIDLEY was also accepted, which provided that unless the inspector for the district otherwise allowed it should be the duty of the employer to post a notice in the workroom stating the number of employees who might be engaged there at one time.

POWERS OF SANITARY INSPECTORS

On Clause 8 (Enforcement by district councils of certain provisions of Part 1) Major MILNER moved an amendment. He said the clause provided that in any of the succeeding provisions of the Bill there should be substituted for reference to the inspector a reference to the medical officer of health. The purpose of his amendment was to add the words "or sanitary inspector." The clauses related to cleanliness, overcrowding, temperature, ventilation, drainage, and sanitary conveniences. These things were peculiarly the functions of the sanitary inspector. If the clause went through as it stood, the House would take away from sanitary inspectors the power they at present had under the Factory and Workshops Act of 1901. Without this amendment, when the sanitary inspector came along, even under the direction of a medical officer of health, a factory owner could tell him that he had no authority to come into the factory.

Mr. T. M. COOPER said the clause was not to determine which officer of a local authority was to perform certain duties relating to inspection. Its purpose was to transfer to a named officer of a local authority certain powers which, under the scheme of factory legislation, were specifically conferred on the inspector. The amendment would extend the powers of sanitary inspectors beyond those they now enjoyed. It would be out of harmony with the system of local government to suggest that the medical officer of health should act on a report of a sanitary inspector. The Sanitary Officers Order of 1926 was among the administrative regulations and controlled the relations of the medical officers of health to the sanitary inspectors. The sanitary inspector worked under the supervision and direction of the medical officer of health and was a subordinate person. The amendment was negatived. On a motion of Mr. LLOYD amendments were made on Clause 14 (Other machinery).

On Clause 21 (Training and supervision of young persons working at dangerous machines) Mr. BURKE moved an amendment. He said the clause empowered the Minister to prescribe certain machines to which the clause should apply. The Labour Opposition contended modern factories were of such a character that the whole place was dangerous; the machines to be described would in the main be those which had been involved in accidents. If the amendment was accepted, safety-first instructions would be part of the terms of employment of every young person. The rate of accidents among boys was 38 per cent. above the rate for older persons and 65 per cent. above in the case of girls. Mr. LLOYD said the Home Secretary intended to make full use of the power given in the clause, and after the Bill was passed the Home Office would issue lists of machines which came under the terms of the clause. The amendment was withdrawn.

Amendments were made on a motion of Mr. LLOYD in Clause 22 (Hoists and lifts) and on the motion of Mr. GRAHAM WHITE in Clause 23 (Chains, ropes, and lifting tackle).

On Clause 25 (Construction and maintenance of floors, passages, stairs, and ladders) Mr. MARSHALL moved to provide that where the floor of any workroom was apt to become slippery effective steps should be taken to prevent accidents. Mr. LLOYD said it would be unwise to insert in a statute of criminal offences a requirement which gave occupiers of factories only a vague indication of what they were to do. It would be better to leave it to the Secretary of State under Clause 59 when making regulations for dangerous trades to insert provisions dealing with slipperiness of floors. The amendment was withdrawn.

On Clause 27 (Precautions in places where dangerous fumes are liable to be present) drafting amendments were made, and Mr. WHITE moved an amendment prescribing that the manhole in tank waggons and other mobile plant should be not less than 16 in. long and 14 in. wide. The amendment was accepted.

FIRST-AID TRAINING

On Clause 45 (First-aid) Sir SAMUEL HOARE moved to leave out the restriction to factories using mechanical power of the obligation to provide first-aid equipment. This was accepted, as was also an amendment providing that in factories employing fifty persons or upwards the person in charge of the first-aid equipment should be trained in first-aid treatment.

On Clause 52 (Underground rooms) Mr. SHORT moved to provide that work should not be carried on in any underground room "unless it is certified by the inspector for the district to be suitable for the purpose on hygienic grounds and in particular as regards construction, light, ventilation, and adequate means of escape in case of fire." Sir SAMUEL HOARE said if inspectors had to certify every one of these underground rooms, although they knew that many reached a comparatively high standard of accommodation, they would not have time to do more urgent work. He asked the House not to accept the amendment. The amendment was defeated by 209 to 134. A further amendment by Mr. SILVERMAN to insist upon a height of 8 ft. 6 in. from the floor to the ceiling of underground workrooms was also negatived.

Mr. LLOYD moved to provide that in the case of any underground room which at the commencement of the Act did not form part of a factory or was not used as a workroom in a factory other than for storage the occupier should, before the room was used as a workroom, give notice in the prescribed form to the inspector for the district, and should not use the room for any process of a hot, wet, or dusty nature or which was liable to give off any fume without the consent in writing of the inspector of the district. The amendment was agreed to.

On Clause 53 (Basement bakehouses) Mr. BANFIELD moved to provide that no such bakehouse should be used after five years from the passing of the Act. He said there had been no new underground bakehouses since 1901, and in that year the majority of the existing underground bakehouses were already old. The amendment was defeated by 187 to 125, and a further amendment was inserted to provide for the examination in the year of commencement of the Act and in every fifth year succeeding that, by every district council, of each basement bakehouse in respect of which a certificate of suitability had been issued. If the council is not satisfied with the result of the examination, they shall give notice that the certificate

shall cease to have effect after the expiration of not less than one month and that the basement bakehouse shall not thereafter be used as a bakehouse.

The discussion of the Bill was adjourned.

EMPLOYMENT OF YOUNG PERSONS

When consideration of the Bill was resumed on June 17, Mr. RHYS DAVIES, on Clause 69 (General conditions as to hours of employment of women and young persons), moved to insert a provision that it should not be lawful to employ a young person under the age of 15 in a factory. Sir SAMUEL HOARE said we were reaching a time when the school-leaving age would go up. Mr. Rhys Davies did not believe in the possibility of beneficial employment for those under 15, but that was not the view of the House when it passed the Education Act under which it was possible, with rigid safeguards, to make exemptions for beneficial employment. Lord EUSTACE PERCY said that, broadly speaking, factory employment was incompatible with education during the years up to 15. Mr. GEOFFREY LLOYD quoted a report from an industrial district which declared that the great majority of the girls and more than half of the boys leaving school requested factory work. He reminded the House that under the Education Act the education authority in granting leave to take up such work would have to consider the health and physical condition of the child. The amendment was defeated by 207 to 137.

Mr. SHORT moved to make the conditions of hours of employment general by leaving out the reference to women and young persons in Clause 69. The amendment was defeated by 193 to 125. Mr. DOBBIE moved to reduce the maximum hours of weekly work for women and young persons from 48 to 40. Mr. LESLIE said the report of the chief inspector showed that accidents to young persons had risen from 3 per cent. in 1928 to 22 per cent. in 1935 owing in the main to the long hours which these young people had to work. Sir SAMUEL HOARE said if the House reduced the hours of 1,500,000 women and 1,000,000 young persons under 18 from 48 to 40, it would dislocate industrial life. So far as women were concerned, the Government did not feel justified on grounds of health and safety in reducing their hours of labour to 40. The amendment was defeated by 195 to 128.

The House adopted an amendment proposed by Mr. LLOYD to ensure that in the case of young persons under 16 the period of employment should not end later than 6 p.m. He said it might necessitate a reorganization in some London workshops.

Technical amendments were made dealing with overtime in trades where there is exceptional pressure for a short time in the year and also with hours of work in factories where milk is treated and in tenement factories.

DUTIES OF EXAMINING SURGEONS

On Clause 124 (Appointment and duties of examining surgeons) Mr. RHYS DAVIES moved to provide that, subject to the consent of the employed person concerned, the examining surgeon should have the right to inspect the medical records of the medical practitioner employed by the occupier of the factory. He said a point of etiquette might arise on that inspection, and the Labour Opposition proposed that the examining surgeon for this purpose should be paramount over the medical officer employed by the firm. Mr. LLOYD said this proposal depended on the doctor employed by the firm having kept his records at the factory in a form in which they could be read by other people. A more serious objection was that the examining surgeon should have the right to a roving inquiry into the records of another practitioner irrespective of the precise scope of his duties under the Act. It would be more practicable to leave the matter to be settled between the two doctors. The Home Secretary would bear the point in mind under subsection 5, which provided that he might regulate the duties of the examining surgeon. Mr. Rhys Davies withdrew his amendment.

Mr. ELLIS SMITH moved to insert in Clause 124 that where any person was liable to contract an industrial disease from any process carried on in a factory, the examining surgeon should examine such person at least once a month during working hours, and keep a record of such examinations for the inspector. He said his object was to secure that further steps would be taken by the Home Office to deal with silicosis, asbestosis, dermatitis, and other industrial diseases.

Mr. LLOYD said the term "industrial disease" was too vague. It would mean that a vast number of examinations would have to be made. A month was too rigid a period for the examination. In the lead poisoning regulations the time between the periodical examinations varied according to the process. Monthly examinations would not be appropriate for silicosis, which developed slowly. Under the silicosis provisions of the Workmen's Compensation Act periodical examinations were made, but the intervals varied according to the process and the concentration of silica dust in a particular process. For silicosis a technical and skilled diagnosis was required which the ordinary doctor was not capable of carrying out. Mr. Ellis Smith should consider whether there was a particular case in the potteries—the industry with which he was connected—for requiring periodical examination in connexion with additional processes. The Home Office would look carefully into any further information on that matter. With regard to dermatitis a monthly examination would not be frequent enough. The workman should have his hands examined daily, perhaps as he went into the works, and the practical method of dealing with the question would be for the Home Secretary to make regulations under Clause 59—the dangerous trades clause. He reminded Mr. Ellis Smith that under Clause 11 the Home Secretary had for the first time power to require the medical supervision of workers in all factories in certain circumstances. Mr. Ellis Smith then withdrew his amendment and the report stage was completed.

The Bill was read a third time in the House on June 22, Sir Francis Fremantle being among those who took part in the debate.

Methylated Spirits Bill

The Methylated Spirits (Scotland) Bill, which had passed the House of Commons and secured a second reading in the House of Lords, was taken in committee of that House on June 17. Lord ASKWITH moved a series of amendments, which, he said, had been redrafted in the Scottish Office, and he understood that the Government and the promoters of the Bill were prepared to accept them. The object was to avoid double listing and dual authority. The chemists in Great Britain were, by an Act passed in 1933, placed under the Lord President of the Council and under the Statutory Committee. Certain provisions in the Bill would be applied by this Committee. The proposal embodied in the amendments was that while local authorities and the resellers of surgical spirit or methylated spirits would be controlled by the Bill, doctors or chemists, who were already under stringent regulations, should be treated by authorities whose powers should continue to exist.

The House then agreed without discussion to the amendment proposed by Lord Askwith, including one to add to Clause 1 the following proviso:

"Nothing in the foregoing provisions of this section shall apply to surgical spirit sold by an authorized seller of poisons on registered premises or supplied by a duly qualified medical practitioner, registered dentist, or registered veterinary surgeon for the purposes respectively specified in subsection (1) of Section 19 of the Pharmacy and Poisons Act, 1933, if the requirements of subsections (2) and (3) of the said section are complied with in relation to such sale or supply of surgical spirit in like manner as if it were a medicine."

The committee stage was concluded.

On June 22 the Bill passed the report stage in the House of Lords.

Health Services Debate

In the House of Commons on June 18 the estimates for the Ministry of Health were further discussed, and on this occasion the votes put down included that for the Board of Control. Mr. ARTHUR GREENWOOD opened the debate by discussing housing and the working of the Overcrowding Act.

MENTAL TREATMENT CRITICIZED

Mrs. TATE raised the question of the treatment of mental disease. A few days previously, she said, the Minister of Health opened a new mental hospital at Runwell which cost £650,000 to build and would hold about 1,000 people. It was a very fine place, and people who went there would receive care and attention according to the present ideas of what the mentally afflicted should receive. The problem, however, was whether such enormous expenditure was necessary. Taking the average of the country the cost of a mentally treated person was about 28s. each weekly after buildings, land, staff, and so forth were paid for. Yet a newspaper had said that for £75,000 this country could have the finest mental research laboratory in the world. What was needed was a realization of the enormous proportion of cases of mental disease of wholly physical origin which would never have required mental treatment if proper treatment had been given in the early stages. She herself did a certain amount of certifying, and the people she had to see fell into two categories. In the first were those for whom nothing could be done beyond keeping them in comfortable conditions and seeing that for the rest of their lives they did as little harm as possible. In the other category were those human beings who, until the present or some previous attack, were often intelligent, valuable members of the community, not even old, sometimes in early life. They had to be certified, and if they went to Shenley or Runwell doubtless were examined and had proper treatment. But why were they not examined and treated long before they reached the stage of having an attack? Almost nothing was being done in this country to treat mental diseases in their early stages. Many affected persons went to an asylum where they would be lucky if they had any medical attention worthy of the name and if any real examination into the physical side of the illness was ever made.

"APPALLING" MENTAL HOSPITALS

Part 2 of the report of the Board of Control was an unsatisfactory document. It pointed out little real difference between the good hospitals and the bad, and the bad were almost too appalling to be believed. It showed that in many mental hospitals there were between 300 and 400 patients to each doctor. In many of them there was practically no dental treatment whatever, and the sanitary conveniences would not be allowed in any other building. Of one hospital the report said it was rather a pity that the washing arrangements were such that it was only possible for patients to be washed once a fortnight. There were recommendations that the scrubbing-brushes used for the kitchen tables and the lavatory pans would be better if they were not identical, and for patients to have individual toothbrushes. Money spent on such conditions was money poured down the drain. There must be more accommodation in many parts of the country, but were they to build gigantic colonies such as Shenley and Runwell at appalling expense or set up clinics for the treatment of disease in its early stages? If these hospitals had to be enlarged could it not be done with greater effect at a smaller cost? In all the counties of England country houses were for sale which nobody was likely to take. Surely they could take some of these houses of moderate size, modernize them, put a certain class of mental patient into them, and have a panel of visiting doctors.

"NERVE CLINICS"

Mrs. Tate asked the Minister to suggest to local authorities a wider extension of the work which was being done at Park Royal, Middlesex, where there was a clinic for treatment of nervous patients. A stigma attached to the name "mental disease." Therefore call these centres "nerve clinics," do everything to see that anyone suffering from nervous disease attended a nerve clinic, and ensure that when they went there their whole physical condition would be properly investigated. People who had been discharged after receiving mental treatment complained to her of lack of human understanding. It was not always the fault of the staff. In many hospitals it was almost impossible to get any staff, and the first improvement to be made in mental hospitals where conditions were bad should be an improvement in the conditions under which the staff lived and worked. Mrs. Tate begged the Minister, when the head of a hospital which had been a bad hospital left, not to let the second in command be promoted just because he had been there a long time. The country welcomed the fact that St. George's Hospital was attempting to undertake treatment of mental and nervous disorders in the early stage. That should be compulsory in every State hospital and should be urged on every voluntary hospital.

MATERNAL AND TUBERCULOSIS MORTALITY IN WALES

Mr. JAMES GRIFFITHS said he found alarming facts in the reports upon the health of the people in Wales. He appealed to the Minister to assist Wales more generously to develop her social services. Of the ten worst administrative counties for maternal mortality eight were Welsh; of the ten worst in respect of mortality from tuberculosis six were Welsh: of the thirty worst for overcrowding eleven were Welsh. These were not separate problems but really one problem. In 1924-33 maternal mortality in Wales exceeded the maternal mortality in England by 35 per cent. The rate in the special areas had been substantially increasing, and South Wales generally had had 10 years of poverty and unemployment. Of 665 mothers examined at infant welfare centres in Wales 30 per cent. were anaemic and in an emaciated condition. Out of thirteen administrative counties in Wales eight had no ante-natal clinic, yet they were among the counties which showed the worst maternity rate. The best services in the world would be inadequate to offset the general poverty and overcrowding, the low incomes, and the low standard of life.

Mr. LOVAT FRASER said children were living in workhouses to-day contrary to the regulation which provided that no child over the age of 3 should live in a workhouse for longer than six weeks. There was still need for vigilance to prevent cruelty in children's homes.

Captain ELLISTON regretted that Sir Kingsley Wood gave the House no assurance about the promised long-term milk policy. Outbreaks during recent years of typhoid, paratyphoid, scarlet fever, and septic throats had been recognized by the Ministry as directly due to milk-borne infection. The case for the pasteurization of milk was scientifically irrefutable. The real opposition to the protection of the public against milk-borne disease was dictated by economic considerations because pasteurization would involve some producer-retailers in extra costs. He had recently brought to the notice of the Ministry the fact that large quantities of boned beef were imported in unrecognizable cuts with lesions removed that might indicate disease. Large consignments of this beef were brought to the City of London market, but a proper inspection was impossible. The Ministry had given assurance that the system of inspection at the port of origin was absolutely reliable, but he had a report in his hand by Mr. Ross Grant, the Australian veterinary officer, which seemed an admission that boned beef enjoyed no respect in Australia. Nearly 2,000 tons of that beef came to England each month, more than half of it from Australia. Was it too late for the amendment of the Public Health (Imported Foods) Regulations which were to come into force on January 1, 1938?

VOLUNTARY HEALTH ORGANIZATIONS

Capt. Elliston wondered how far the Ministry was wise in delegating its responsibilities to voluntary bodies. An example of this practice was found in relation to rheumatic disease, a malady which accounted for one-sixth of the expenditure on national health insurance and caused 50 per cent. of heart disease. The Empire Rheumatic Council, a voluntary organization, was spending its time endeavouring to raise funds to carry on its work. The Minister ought to help this organization by finding funds and by stimulating local authorities to establish clinics in connexion with public baths. He should also induce those authorities to provide wards and research units in Poor Law hospitals which they had taken over. The Population Investigation Committee was another voluntary organization which had no staff and no funds. A matter so urgent for the future of the race really called for immediate appointment of a Royal Commission backed up by the resources of every Government Department concerned.

SIR KINGSLEY WOOD'S REPLY

Sir KINGSLEY WOOD, dealing with the anticipated decline in population in reply to the debate, said what was first needed was research of a scientific kind—more facts and a more satisfactory and informatory method of getting population statistics. Complete information could only be obtained by the census or by the registration system. The next census would not be taken until 1941, and it was better to build up annually a continuous volume of statistics. Therefore the registration system was best for the purpose, but existing powers only permitted information relating to births to be obtained for entry in the birth register, and full copies could be obtained by the public. A proposal to enter up in the register information of the duration of the marriage and the number of children previously born of it was open to objection. The objection would be met if it were arranged for the necessary particulars to be given to the registrar confidentially not for entry in the public register but for statistical purposes only. He would examine this matter. If it were adopted legislation would be required.

VENEREAL DISEASE: VISIT TO SCANDINAVIA

Sir Francis Fremantle and Mr. Grenfell had referred (in the earlier debate) to the measures taken in relation to venereal disease in certain Scandinavian countries. The scheme for prevention and treatment of venereal diseases in this country was based on the recommendations of the Royal Commission which reported in 1916. The Commission reported against any system of compulsory notification or treatment on the ground that the element of compulsion would deter some people from consulting a doctor or attending at a centre. They had built up about 180 centres in England and Wales, and the total number of attendancies by patients each year was well in excess of 3,000,000. In 1935 the total number of persons dealt with for the first time at the centres was 98,000, and of those as many as 36,230 were found not to be suffering from venereal disease. That showed that the centres were readily used by persons apprehensive of having contracted the disease. The number of fresh cases of syphilis attending the centres had steadily fallen from some 23,000 in 1930 to 19,000 in 1935. In 1920 the number of these cases was about 42,800. That striking evidence was confirmed by the death rate for infants under 1 year of age certified as due to syphilis. The number of cases of gonorrhoea attending the centres had not varied very much in recent years, and it was commonly supposed that many sufferers from this disease, especially women, did not receive proper treatment either at a centre or from a private doctor. The present policy and belief was that the use of these centres by persons suffering in this way could best be secured by judicious education and propaganda on the importance of seeking early and skilled treatment for this disease. The anti-venereal disease measures in Scandinavian countries differed essentially in having notification and compulsory treatment. In this country there had been a decline of 36 per cent. in the figures of fresh syphilitic infections since 1931. Between 1924 and 1929 there was apparently little or no decline, but since then the decline had been remarkable, and the rate of fresh infection with syphilis, now in the region of 160 per million of the population, compared favourably with the rate of 220 per million in Denmark. The Minister felt, however, that a further special study of one or more of the Scandinavian systems might yield useful results. The Secretary for Scotland and he were arranging for one medical officer from each of the two departments, together with an administrative officer experienced in venereal diseases, to visit Scandinavia at an early date and report. They would consider the extension of that inquiry to Holland where there was voluntary treatment.

MENTAL DISORDER AND DEFECT

Sir Kingsley claimed that good progress was being made in human progressive treatment of the mentally disordered and mentally defective people of the country. Mrs. Tate had read extracts from the report of the Board of Control regarding bad cases, but that report recorded a far greater number of good cases, and in no other country was there so frank a statement of the position in mental institutions. Directly officers of the Department ascertained these cases they wrote to the authorities concerned, called upon them to remedy the conditions complained of, and later saw what steps had been taken. Three things were required in the mental services of the country. First there must be constant vigilance in the conduct and control of these institutions. Secondly, he attached great importance to efforts to secure the right type of nurse. Thirdly, it was essential to investigate vigorously any instance of ill usage or bad treatment. He thought there was need for further research into causes of mental affliction, and he had recently appointed a committee under Lord Radnor to see what could be done to advance research. The need for providing more accommodation was fully realized and schemes were in hand or in contemplation. Loans sanctioned last year for purposes of the Lunacy and Mental Treatment Acts were over £2,000,000 as compared with £1,700,000 in 1935–6. One of the best signs in connexion with the treatment of mental disease was a steady increase in the flow of voluntary patients. More than 25,000 patients were admitted last year to public mental hospitals, and of these nearly 27 per cent. were voluntary admissions. A larger number of people were seeking early treatment and had confidence in the institution. Out-patient clinics now totalled 165. To take over country houses for mental treatment purposes as suggested by Mrs. Tate would not be economic. It had been tried and found expensive. The importance of physical illness as a causal factor in mental disorder was widely recognized. Under the mental treatment rules the medical superintendent of an institution was required to send to the Board of Control a statement of the mental and bodily health and condition of the patient within seven days of the patient's admission.

The discussion was adjourned.

Pensions of Local Government Officers

The Local Government Superannuation Bill came before a standing committee of the House of Commons on June 22.

On Clause 5 (Power to admit employees to statutory undertakings) Captain ELLISTON moved to add a proviso which enabled a local authority operating the Midwives Act, in arrangement with a voluntary organization employing whole-time midwives, to admit such midwives to the benefits of the authority's superannuation scheme by agreement in the same way as employees of statutory undertakings could be admitted. Under such an agreement the employing organization would be required to make contributions to the funds in addition to the midwife's own contribution, and this would be taken into account in fixing the financial assistance given by the authority to the voluntary organization. The justification for the amendment was that midwives did on behalf of the local authority the same work that was done in other cases by municipal midwives. The committee agreed to the amendment, and Clause 5 was added to the Bill.

On Clause 6 (Contributions) Sir TERENCE O'CONNOR moved an amendment to provide that persons unable to discharge their duties in consequence of incapacity, whether transferred to another post or not, should be enabled to make their old contributions at their own expense in order to maintain the pensionable position as though they had not suffered a decline in health. He said that as the clause stood that right was restricted to people who were transferred from one post to another. The amendment was accepted, and the clause as amended was approved.

QUALIFYING PERIOD OF SERVICE

On Clause 8 (Eligibility for superannuation allowance and scale of allowances) Mr. GRANT-FERRIS moved to leave out "40" and to insert "30." He said his object was to press the advisability of altering the retiring age from 65 to 60. The non-professional employee started work under the local authority at the age of 20 or even younger, and thus was able to complete forty years of service and retire at the age of 60. The professional man could not start before he was 25, and thus was unable to retire until 65. A man should have the chance of getting out at 60 and securing some other congenial employment. In justice to doctors, engineers, veterinary

surgeons, and so forth, this opportunity of retiring at the age of 60 with pensions commensurate with their years of service ought to be allowed.

Sir KINGSLEY WOOD said Mr. Grant-Ferris wished to replace the period of forty years' service by one of thirty years. The committee that considered this matter made no such recommendation, and forty years was the limit for the purpose of the Poor Law Officers Act. In one or two cases, for which there was good reason, the qualifying limit was twenty years. There was an earlier retiring age under the Asylum Officers Act because of the arduous character of the work which male nurses in a mental hospital service were called upon to perform, and midwives and health visitors could qualify for pension after thirty years, again owing to the arduous character of their duties. No such conditions applied to the ordinary work of the ordinary local government employee. Forty years was the limit for the Civil Service. Sir Kingsley added that he could not accept the suggestion, as it would affect the stability and security of the superannuation funds. Mr. Grant-Ferris withdrew his amendment.

On Clause 12 (Reckoning of contributory and non-contributory service, and service of persons indirectly employed) Captain ELLISTON moved to insert the following:

> "In computing the amount of superannuation allowance payable under this Act, a local authority may, in consideration of peculiar professional qualifications or of special circumstances, with the consent of the Ministry of Health, add a number of years not exceeding ten to the number of years which the officer to receive the allowance has actually served in the aggregate.

He said the amendment expressed the feeling that added years should be allowable by a local authority in the case of its professional officers. These professional officers entered the service at a comparatively late age, and were commonly unable to achieve their full pensions. They entered at a salary level higher than that of non-professional officers, and one which climbed less speedily towards the maximum. Their contributions in proportion to the pension finally achieved were much higher than those of the non-professional workers. This applied especially to doctors.

Sir TERENCE O'CONNOR said he could not recommend the committee to adopt the amendment or to permit the principle to be established in the Bill The principle of added years had been condemned by the Royal Commission on the Civil Service, and had been abolished in the Civil Service since 1914. The amendment was withdrawn and the clause ordered to stand as part of the Bill.

Sir Terence O'Connor moved an amendment to Clause 16 (Midwives and health visitors). He said the clause as it stood gave effectual recommendation that the retiring age for female workers, midwives, and health visitors should be 65. Under this arrangement these women who had to go through a period of training beforehand could not complete forty years' service and earn the maximum pension if they had to retire at 60. The amendment would enable local authorities to grant compensatory allowances to nurses, midwives, and health visitors in their service as contributory employees even if they had not completed forty years' service on reaching the age of 60. These allowances would be on a scale to bring the pension at an earlier age up to that received if the women had been permitted to serve to the full age of 65. Any such addition to the pension earned would not be made from the pension fund, but would be voted out of the rates of the local authority. The amendment was approved, and Clause 16 as amended ordered to stand part of the Bill.

When discussion of the Bill was resumed on June 24 Sir KINGSLEY WOOD explained that the object of a proposed new subsection to Clause 26 was to empower local authorities to include in the scheme which they had to submit under that clause a provision whereby they could, if they wished, continue to require employees or prospective employees to pass a medical examination before coming into the superannuation scheme. The amendment was accepted and the clause approved.

"TEMPORARY" SERVICE

The Minister also brought forward a new clause dealing with whole-time officers appointed in a temporary capacity. He said he must have regard to the position of people who entered the local government service in a temporary capacity but remained for several years, and at the end of that time were in a position difficult to distinguish from those who had been placed on the permanent staff. The effect of the clause was that a local authority might in the case of any officer expressly engaged in a temporary capacity for the period of not more than two years determine that he should not be a contributory employee. At the end of two years' local government service, continuous or not, such an officer would automatically become a contributory employee whether he remained with the same authority or transferred within twelve months to another. In the latter case the authority by whom he was originally employed had to pay to the authority to which he went a prescribed transfer value. The clause was read a second time and added to the Bill.

Captain ELLISTON appealed to the Minister to provide interchangeability between the Federated Superannuation Scheme of the voluntary hospitals and the superannuation scheme under the Bill. Such a provision would promote interchange of personnel between the voluntary and the municipal hospitals, and would enhance the quality of hospital work all over the country. The matter was of special importance to nurses. Sir KINGSLEY WOOD regretted that there were almost insuperable difficulties of a financial and actuarial character which prevented reciprocal arrangements of the kind indicated.

The Bill as amended was reported to the House.

Public Exhibition of Animal Experiment Films

A Standing Committee of the House of Commons on June 23 considered the Cinematograph Films (Animals) Bill. The object of the Bill is to prohibit the public exhibition of films in the production of which suffering is caused to animals, or any films which depict the suffering of animals brought about by any means, either natural or artificial.

Sir ROBERT GOWER moved an amendment providing that a cinematograph film shall be deemed to be exhibited to the public when, and only when, it is exhibited in a place to which for the time being members of the general public have access, whether on payment of money or otherwise, and the expression "public exhibition" to be construed accordingly. He said that the Bill would only affect the public exhibition of films, and it had been amended for that reason. It was represented to him and to the other promoters of the Bill by members of the medical profession that to-day a number of films showing demonstrations—he would not say experiments—on animals were taken and were used for the purpose of exhibitions to medical students and also to students in universities. Whatever the views of members of the committee might be on vivisection they would all agree that it was much better that use should be made of cinematograph films for this purpose than that the actual animals should be used for demonstrating. For that reason principally the promoters accepted the suggestion put forward by members of the medical and scholastic professions in this country that the Bill should be limited to public exhibitions of films. From inquiries he was satisfied that very few films were exhibited privately in this country. The great desire in passing this legislation was to discourage people abroad from making films by means which involved cruelty to animals.

Mr. RADFORD said that as one who did not like experiments on animals he thought that the amendment would tend to reduce the number of such experiments. If they could be reproduced on the film for the benefit of students there would not be the necessity for performing so many of them.

The amendment was agreed to and the Bill passed through committee.

Health Insurance of Juveniles

The text of the National Health Insurance (Juvenile Contributors and Young Persons) Bill, introduced by Sir Kingsley Wood, has been issued. An explanatory memorandum says the purpose of the Bill is to provide medical benefit under the National Health Insurance Act to boys and girls who, on

leaving school, become employed before reaching the age of 16, and thus to bridge the gap in medical supervision which at present exists between the school medical service and the commencement of full insurance under the National Health Insurance Act. The Bill accordingly provides that any boy or girl who, after reaching school-leaving age but before the age of 16, becomes employed within the meaning of the National Health Insurance Act, shall immediately become entitled as a "juvenile contributor" to medical benefit as though he were an insured person, and that whether or not he remains continuously employed he shall continue to be so entitled until the end of the half-year in which he attains the age of 16½, or until he becomes entitled to the benefit as a fully insured person by reason of employment after the age of 16, whichever first occurs.

FINANCIAL PROVISIONS

The contributions to be paid are 4d. a week, divided equally between the juvenile contributor and the employer. The cost of medical benefit and the cost of adminstration will be defrayed in the same manner as benefits under the principal Act—that is, as to six-sevenths (boys) and four-fifths (girls) out of the contributions, and as to the balance out of moneys provided by Parliament. The charge for medical benefit, including the supply of medicines and administration by insurance committees, will be on the same basis as for ordinary insured persons—namely, a sum not exceeding 13s. per head per annum—and provision will also be made for an allowance to approved societies for their work in the issue and collection of contribution cards, etc.

It is estimated that the number of juvenile contributors at the outset of the scheme will be about a million. Owing to the increase in the number of children remaining at school until the age of 15 after September, 1939, and the decrease in the number of births in the last fifteen years, the number of juvenile contributors will diminish in the next few years, and it is probable that by 1943 the number will not exceed 750,000.

SCHOOL MEDICAL RECORDS

The Bill provides that it shall be the duty of education authorities to make arrangements for their officers to furnish in confidence, on the application of an insurance medical practitioner, such particulars of the school medical record, either of a juvenile contributor or of any insured person under the age of 18, as the practitioner may require to assist him in the treatment and medical supervision of the young person.

In the Schedule to the Bill the appropriate provisions of the principal Act are applied, with or without modification, to juvenile contributors in order that the machinery and procedure of the main scheme may be utilized for this new class of contributor. Clause 7 provides in the usual form for the application of the provisions of the Bill to Northern Ireland under parallel legislation passed by the Parliament of that country. The Act is to come into operation from January 1, 1938, but contributions are only to be payable from the following Monday (January 3).

National Defence Contribution.—On June 21 the House of Commons approved a resolution authorizing a National Defence Contribution for five years at an annual rate of 5 per cent. on the profits for any trade or business. Sir JOHN SIMON, explaining why professions would be excluded, said: "Take two highly skilled medical men. One is a medical officer of health and the other is carrying on the private practice of a doctor—he is a doctor in the West End. He is taxed no doubt on his profession. His colleague in medicine who holds a public office is not taxed on the grounds of his profession at all, but is taxed as the holder of an office or as one engaged in an employment. If indeed we were to widen the scope of the tax in the way sometimes suggested we should find it extremely difficult to know where to stop. Why should you apply it to a West End doctor and not apply it to a medical officer of health?

Mr. R. C. MORRISON: Does the right hon. Gentleman know a medical officer of health receiving over £2,000 a year?

Sir J. SIMON: It is easy to give an example of men who are professional but none the less are employed at high salaries.

Medical News

The ninety-sixth annual meeting of the Royal Medico-Psychological Association will be held at the County Buildings, Ayr, on July 7, 8, and 9. The in-coming president, Dr. Douglas McRae, will deliver his presidential address entitled "Some Observations on the Care of the Insane" at 2 p.m. on Wednesday, July 7, and the annual dinner will be held in the County Hall at 8 p.m. the same day. The subject for discussion at the meeting is "The Circulatory System and the Psychoses."

A meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, Cavendish Square, W., on Tuesday, July 13, at 4 p.m., when Mrs. Lilias M. Blackett Jeffries, M.D., will open a discussion on "Marriage in Relation to Alcohol and Drug Addiction."

The eleventh International Congress of Psychology, which was to have taken place at Madrid last September, will be held at the Sorbonne, Paris, from July 25 to 28, immediately before the ninth Congress of Philosophy. Further information can be obtained from M. I. Meyerson, Laboratoire de Psychologie, La Sorbonne, Paris, 5e.

The first International Congress of Infantile Psychiatry will be held in Paris from July 27 to August 1. Further information can be obtained from the treasurer, M. Gimbert, 11, Rue Duroc, Paris 7e.

The Royal Society of Tropical Medicine and Hygiene has awarded the Chalmers memorial gold medal for tropical research to Professor R. M. Gordon of Sierra Leone, and the presentation was made at the annual general meeting on June 17. The medal was founded by Mrs. Chalmers in memory of her husband, the late Dr. Albert J. Chalmers. It is awarded every two years in recognition of research of outstanding merit contributing to the knowledge of tropical medicine or tropical hygiene. The recipient must be under 45 years of age at the time of the award.

The trustees of the Lady Tata Memorial Fund announce that, on the recommendation of the Scientific Advisory Committee, they have made the following awards of grants and scholarships for research in blood diseases, with special reference to leukaemia, in the academic year beginning on October 1. Grants for research expenses or for scientific assistance: Dr. Julius Engelbreth-Holm (Copenhagen), Professor Dr. Karl Jármai (Budapest), Professor James McIntosh (London), Professor agrégé Dr. Charles Oberling (Paris), Professor Eugene Opie and Dr. Jacob Furth (New York), Dr. Georg Weitzmann (Leipzig), Dr. Lucy Wills (London). Scholarships: Dr. Jörgen Bichel (Aarhus, Denmark), Dr. Edoardo Storti (Pavia, Italy).

Lieut.-Colonel J. H. Yolland, C.B.E., has been appointed a vice-president of the Kent Branch of the British Red Cross Society.

Sir Harry Lindsay, K.C.I.E., Director of the Imperial Institute, has accepted nomination as President of the Association of Special Libraries and Information Bureaux (ASLIB) for the year 1937–8. The Association will hold its fourteenth annual conference at Gonville and Caius College, Cambridge, during the week-end beginning September 24. Particulars may be obtained from the Secretary of the Association, 31, Museum Street, W.C.1.

Miss Ethel Benwell has retired from the service of the British Medical Association after completing thirty-seven years' work in the Editorial Department. Miss Benwell joined the staff of the *British Medical Journal* on May 28, 1900, and on June 30, 1937, presentations were made to her by the Editor and his immediate colleagues, and by other fellow workers at Tavistock Square.

The fourth Congress of the Medical Women's International Association—of which the Queen is Patron—takes place in Edinburgh from July 13 to 18. The inaugural meeting will be held at 2.30 on Wednesday, July 14, in the McEwan Hall, University of Edinburgh. The speakers include Dr. Sundquist (president of the M.W.I.A.), Sir Thomas Holland (Vice-Chancellor of the University of Edinburgh), Sir Norman Walker, Sir William McKechnie, and representative medical women from different countries. Intending members who have not yet enrolled should apply to the local congress secretary, 2, Chester Street, Edinburgh, for any information.

July 7 marks the centenary of the birth of Sir Morell Mackenzie, the eminent Victorian laryngologist whose textbook on diseases of the throat and nose was for a long time a standard work on the subject. His obituary notice was published in the *British Medical Journal*, 1892, **1**, 363.

Two cases of yellow fever, which has hitherto been unknown in Asia, have recently been reported in Hong Kong.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

The TELEGRAPHIC ADDRESSES are
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the B.M.A. Scottish Office is 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh), and of the Office of the Irish Free State Medical Union (I.M.A. and B.M.A.), 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 62550 Dublin).

QUERIES AND ANSWERS

Sun Sensitivity

"F. L." would be glad of suggestions for treating a case of sensitivity to sunlight. The lady concerned has only to go out in the sun for a short time to occasion a blotchy, erythematous, irritable rash of the parts exposed, which lasts for days. Once, when she had an exposure to "artificial sunlight," she had a reaction sufficient to blister. The persistent rash responded immediately to injections of Martindale's "peptone," but exposure to sun still causes some recurrence, although less severe.

Cancrum Oris

Dr. HOPE TRANT (N. Rhodesia) writes: Medical practitioners in Africa must see many cases of cancrum oris amongst native children. I should be glad to have their opinion on how best to treat it. Curettage, in my experience, is of no value.

Splitting Finger-nails

"E. P.," in reply to "Stumped" (*Journal*, May 29, p. 1144), writes: I find that splitting of the finger-nails is often due to the use of liquid nail polish and polish remover. It can be alleviated by rubbing a little oil of almonds on the nails and cuticle at bed-time.

The Aftermath of Sympathectomy

Mr. J. B. OLDHAM, F.R.C.S. (Liverpool), in reply to "Perturbed" (*Journal*, June 19, p. 1295), writes: I feel sure that the reason why "Perturbed" has seen no allusion in the literature to derangement of the bowels or bladder is that lumbar sympathectomy never has any such ill effects. My own experience extends over ten years and covers nearly a hundred cases, all of which have been carefully followed up. No patient has ever had any bladder complications. Those whose bowel function was normal before operation have noticed no change afterwards, while those who were constipated beforehand found that their constipation was either cured or greatly improved. Two of my patients operated on nine years ago have since borne children, so that there can be no fear of the operation interfering with conception or labour. On the other hand, in the male lumbar sympathectomy results in sterility, as the power of ejaculation is lost. I have found that only in a very few cases of Raynaud's disease are the feet affected severely enough to justify operation, but in those few cases in which operation was done the patients have considered the result a complete and lasting cure. Like all other surgeons, however, I have been disappointed with post-ganglionic sympathectomy in the upper limbs. I am convinced that the extraperitoneal approach to the sympathetic chain is preferable to Adson's transperitoneal method, even when both sides have to be operated on. The operation can be done by a simple muscle-splitting incision in under twenty minutes, and affects the patient so little that he can be up and walking in less than a week.

Professor E. D. TELFORD (Manchester) writes: I have during the last six years performed lumbar sympathectomy in more than 200 patients. The operation is a cord ganglionectomy in which the lumbar sympathetic chain is excised over a length corresponding to the bodies of the second, third, and fourth lumbar vertebrae. These patients have been examined repeatedly since the operation and in no single case, male or female, has any bladder, bowel, or sexual disability been evident. It is true that certain disabilities, mainly sexual, are likely to follow resection of the presacral nerve, but this nerve would never be divided in the treatment of vascular disorders of the lower limb. In cases of Raynaud's phenomenon in the lower extremity my experience is that lumbar-cord ganglionectomy results in a cure which is complete, and, I believe, permanent. It is otherwise with the upper limb. My present view is that excision of the stellate ganglion should not be done; the operation is followed by relapse. The pre-ganglionic section which I designed in February, 1935, and have since carried out in some twenty patients has given excellent results in all cases, but further time must elapse before one can say with confidence that these results will last.

Income Tax

Structural Expenditure

"X. Y. Z." recently enlarged his house, including parts used professionally, and had central heating installed. Can he deduct a proportion of such expenditure in computing his income tax liability?

*** No—the expenditure represented capital outlay and not current professional costs. It might, however, be possible to obtain some allowance by way of depreciation, say, at 5 per cent. per annum, for that part of the outlay which relates to the heating of the professional rooms.

LETTERS, NOTES, ETC.

Medical Golf

The summer meeting of the Medical Golfing Society was held at Sunningdale on June 24, when some seventy members competed over a course which was in perfect condition. Several competitions took place, and the following are the results. *Lancet* Cup: T. P. Kolesar. Henry Morris Cup: H. L. Glyn Hughes. Gordon Watson Cup: J. Grace. Class I: first, H. Lamplough; second, T. P. Kolesar; last nine, V. E. Negus. Class II: first, H. L. Glyn Hughes; second, L. Hartley; last nine, R. Lindsay Rea. Foursomes: (1) Michael Smyth and J. McGrath; (2) Jocelyn Swan and S. Wyard. Knock-out Tournament: winner, N. L. Eckhoff.